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PRIMARY ATYPICAL PNEUMONIA

BY

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Between February and April, 1945, an epidemic of primary atypical pneumonia occurred in British base and training units in the Naples area. During this period approximately 350 cases of primary atypical pneumonia were admitted to a neighbouring British general hospital and 161 to this hospital. Of these 161, 50 unselected consecutive cases were investigated in particular detail. All degrees of severity were represented. There were no deaths. Epidemiologically, it was of interest that the rising incidence of primary atypical pneumonia coincided with the decline of infective hepatitis. Clinical data, serial laboratory investigations, and radiological findings relating to these 50 cases are summarized in this report, which is a preliminary survey of the material collected. In the literature available to us we have been unable to locate any report of the finding of heterophil antibodies in serum from cases of primary atypical pneumonia. For that reason an early report is considered desirable to enable investigators, under research conditions, to repeat the work in subsequent epidemics.

Onset

The onset was described as abrupt by 48 (96%) of the patients, as insidious by 2 (4%). On direct questioning of those reporting an abrupt onset a history of mild prodromal symptoms for from 1 to 14 days (average 6 days) was obtained in 26%. Vague tiredness, "seediness," lack of the usual desire for food, and mild depression or irritability were admitted to have preceded the more acute symptoms. The early features of the acute stage of the disease were shivering, malaise, and lassitude, followed by anorexia, headache, feverishness, flushes, chills, and profuse sweats. Sometimes these symptoms were not severe enough to prevent the patient from carrying on with duty for several days before reporting sick. Most patients were detained in the unit sick bay for observation before being transferred to hospital.

Dating the onset of the disease from the reported presence of symptoms suggesting fever, the cases reached hospital at various stages, as shown in Table I.

TABLE I.—*Stage of Disease on Admission to Hospital*

Day of Disease on Admission	No. of Cases	% Total
1	2	4
2	11	22
3	12	24
4	11	22
5	8	16
6	2	4
7	3	6
8	—	—
9	1	2

The frequency of various symptoms in the present series is shown in Tables II–V.

Toxaemic Symptoms

TABLE II.—*Frequency of Various Symptoms of Toxaemic Origin*

Symptom	No. of Cases	Frequency %
Fever	50	100
Malaise	50	100
Lassitude	50	100
Anorexia	50	100
Shivering	37	74
Chills	29	58
Sweating	28	56
Flushes	26	52
Fascial pains	15	30
Backache	10	20
Weakness	7	14
Body soreness	5	10
Aches in joints	2	4

The duration of pyrexia in hospital averaged 5.9 days (range 0–13 days); the total duration from the onset of symptoms suggesting fever averaged 8.6 days (range 1–16 days). The pyrexia in 8% was mild in degree (99–100.8° F.), in 22% moderate (101–102.8° F.), and in 70% high (103° F. and over). The fever was continuous (oscillations less than 2° F.) in 14%, continuous remittent (oscillations 2° F. or greater) in 84%, of whom one-third showed fever of hectic remittent type, and intermittent in 2%. Temperatures over 105° F. were observed in 2 cases, and over 104° in 15. Defervescence was by lysis in 86% of the cases, by crisis or pseudocrisis in 14%. Marked clinical improvement occurred when the temperature became normal. A transient secondary rise was seen in 16% of cases. Patients with hectic remittent temperature were the most severely ill clinically. Six patients received sulphadiazine and one penicillin with no obvious effect on the temperature or general condition.

As a rule the pulse rate followed the temperature, though showing a tendency to relative bradycardia. In 28% the pulse did not exceed 100 at any stage; in 50% it ranged between 100 and 120 at the height of the fever; in 22% it rose above 120, only one case showing a rate above 140.

Headache, malaise, lassitude, and anorexia were the most constant symptoms. Patients wished to be left alone, and desired the sleep which headache often prevented. Anorexia occurred in all cases—usually slight, in some almost complete. In general, however, most took food without forcing even at the height of the fever. Sweating was profuse in many, occurring night and day and necessitating frequent changes of clothing. Shivering, later followed by flushes and chills, was seen early, but recurred throughout the pyrexial period, some

attacks lasting as long as three hours. No rigors were seen. Body pains were an outstanding complaint in 10% of the cases: patients complained that they felt as if they had been "kicked and thrown around."

Respiratory Symptoms

TABLE III.—*Frequency of Various Respiratory Symptoms*

Symptom	No. of Cases	Frequency %
Cough	47	94
Sputum: Mucoid	23	46
,, Mucopurulent	7	14
,, Blood-stained	12	24
,, Rusty	2	4
No sputum	6	12
Pain in chest	23	46
Shortness of breath	3	6
Dyspnoea	1	2
Epistaxis	3	6

The respiratory rate was little affected, and dyspnoea was seen in only one case. Cough, though present to some degree in 94% of cases, was not an outstanding feature. It occurred occasionally at onset, but more commonly appeared about the fifth day, and tended to be more pronounced after the temperature had fallen. In the early stages the cough was short and dry, occasionally paroxysmal, and frequently very distressing by virtue of its effect in exacerbating headache. Later a small amount of sputum was produced—seldom more than 1 dr. (3.5 c.cm.) per day, except in cases with associated bronchitis, which produced up to 1 oz. (28.4 c.cm.) daily. In cases in which the sputum was blood-stained the amount of blood varied from slight streaking to almost pure haemoptysis. Blood-streaked sputum was seen mostly in the more severe cases with hectic remittent fever, and appeared at any stage of the disease, but usually after the temperature had subsided. The sputum was cultured weekly in all cases. Pneumococci (untyped) and *Micrococcus catarrhalis* were the most frequent organisms: haemolytic and non-haemolytic streptococci and *M. tetragenus* were also found.

Chest pain occurred at some stage in 23 of the 50 cases. In 16 it was pleuritic in type, and in 7 it was described as a dull ache over the affected area of the chest. A pleural friction rub was detected in 26% of patients complaining of pain in the chest.

Neurological Symptoms

TABLE IV.—*Frequency of Various Neurological Symptoms*

Symptom	No. of Cases	Frequency %
Headache: Frontal	44	88
,, General	6	12
Restlessness	13	26
Dizziness	11	22
Depression	6	12
Confusion	5	10
Insomnia	2	4
Prostration	1	2
Meningism	1	2

Headache was the outstanding and characteristic feature of the disease, and was present with varying intensity in every case. In 80% it was violent, continuous, frontal in location, and "splitting" in character, and was aggravated by movement, coughing, or straining. Retro-ocular pain and generalized occipital and temporal headache also occurred. The intense headache and profound lethargy in some gave a picture suggesting encephalitis. Meningism was present in one case. Three cases in the epidemic, not included in this series, had lumbar puncture performed, with normal findings.

Alimentary and Urinary Symptoms

TABLE V.—*Frequency of Gastro-intestinal Symptoms*

Symptom	No. of Cases	Frequency %
Constipation	20	40
Nausea	12	24
Vomiting	10	20
Dryness of mouth	4	8
Sore throat	2	4
Diarrhoea	1	2

Gastro-intestinal symptoms were few and mild, and subsided after the first few days. Constipation was frequent in the early stages, and vague abdominal pains were present in a few cases. Anorexia, already noted, was a constant prodromal symptom.

Frequency of micturition without demonstrable cause was encountered in one case. Four patients reported "dark urine" before admission.

Physical Signs

On admission abnormal physical signs in the chest were often few or lacking.

TABLE VI.—*Frequency of Abnormal Physical Signs in the Chest*

Sign	No. of Cases	Frequency %
Diminished movement	2	4
Impaired percussion note	11	22
Diminished air entry	12	24
Consolidation	1	2
Localized crepitations	48	96
Generalized rhonchi	18	36
Pleural friction	6	12

One-third of the cases had generalized bronchitic rhonchi on admission. The characteristic and most valuable sign was a localized patch of persistent, sticky, fine, or medium crepitations, which were first heard on the average in 5.7 days (range 1–13 days) from the onset of acute symptoms. In some cases crepitations were scanty, difficult to detect, and evanescent during examination; in others they were heard in profuse showers. In two cases no crepitations could be detected at any stage, but typical opacities were apparent on radiological examination. Diminished movement, reduced air entry, and impaired percussion note were seldom of great value in locating the lesion. Cases showing generalized bronchitic rhonchi tended to produce frothy blood-stained sputum during convalescence. Serial skiagrams showed that the disappearance of abnormal physical signs did not imply full radiological resolution. Pleural effusion was not observed in the cases in this series. Other physical signs noted are listed in Table VII.

TABLE VII.—*Frequency and Type of Clinical Signs other than Respiratory*

Signs	No. of Cases	Frequency %
Palpable glands:		
Posterior cervical	30	60
Axillary	14	28
Inguinal	9	18
Epitrochlear	5	10
Spleen:		
Palpable and tender	14	28
Palpable, not tender	4	8
Liver:		
Palpable and tender	6	12
Tenderness	14	28
"Rose spots"	17	34

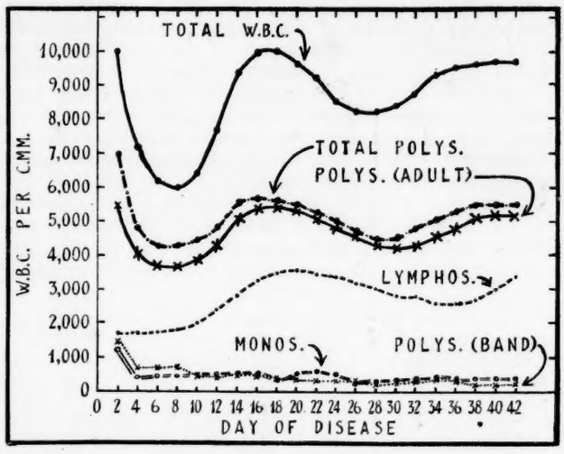
Glands were often found to be enlarged on admission, but they subsided early in convalescence. The posterior cervical group were those most commonly affected. The glands were small, firm, discrete, and not tender. The spleen was just palpable in 18 and slight liver enlargement was detected in 6 of the 50 cases. Scanty small pink macules fading on pressure, similar to the rose spots of typhoid fever, were observed in 34% of the cases in the early stages. They appeared in crops on the chest, back, and flanks, and occasionally on the shoulders. Neurological and cardiac signs were minimal. A lowered blood pressure was observed in some of the more toxic cases. Mild hyperaemia of the pharynx was usual on admission.

Laboratory Investigations (Major J. M. Staveley)

Blood was withdrawn weekly for laboratory investigations. Blood slides were examined for malaria in all cases on admission, and frequently repeated in cases with a previous history of malaria or very high pyrexia. No positives were reported. Owing to technical difficulties, shortage of materials, and the pressure of routine work the number of tests on each patient had of necessity to be limited. Blood counts, sedimentation rates, Takata-Ara and cephalin-cholesterol flocculation tests, and heterophil antibody and cold agglutination tests were done where possible once a week.

Leucocyte Counts.—A total of 311 counts at various stages of the disease were done in the 50 cases. Mean absolute values of the various cellular elements during the course of the disease

are set out in the accompanying Graph. This shows a slight initial polymorph response followed by a depression, which was maximal at the end of the first week. The subsequent rise in both polymorphs and lymphocytes reached a peak at the 16th to 18th days. The differential counts showed a slight relative



Mean absolute values of white cells at different stages of the disease.

lymphocytosis after the initial period. In some of the two-daily groups the numbers were not great, but the trends revealed seemed significant. Scattergrams showed a wide range of values. Eosinophils showed no characteristic changes. Six patients had more than one count in excess of 6% of the total, the highest absolute values being 3,300 (21%) and 4,600 (29%) per c.mm. Both these cases were subsequently shown to be harbouring intestinal parasites.

Red Cells and Haemoglobin.—All counts and estimations were done by van Slyke's copper sulphate method. The red cell counts are therefore approximate only. A haemoglobin value of 15.5 g. per 100 c.cm. was taken as 100%. There appeared to be a tendency towards a mild anaemia with a macrocytic trend. At some stage of the disease 60% of the cases showed red cell counts below 5,000,000 per c.mm.; only two were below 4,000,000 per c.mm. The mean cell volume tended towards the upper limits of normal, with a range from 88 to 95 c.μ. The haemoglobin concentration fell below 14 g. per 100 c.cm. in 56% of the cases at some stage of the disease. The two cases with red cell counts below 4,000,000 per c.mm. received iron; otherwise no treatment was given for the anaemia, and spontaneous recovery occurred during convalescence.

Total plasma protein estimations showed no significant changes. Differential estimations were not possible with the staff available.

Sedimentation Rate (Wintrobe—corrected—normal, 0–9 mm./hr.).—At various stages of the disease 234 estimations were made on blood from the 50 cases. When possible estimations were made on admission and thereafter at weekly intervals. Findings are given in Table VIII.

TABLE VIII.—*Average Sedimentation Rate in Successive 7-day Periods*

Day of Disease	No. of Estimations	Rate in mm./hr.
1–7	21	19
8–14	41	18
15–21	41	13
22–28	45	8
29–35	48	7
36–42	36	7

The highest value obtained was 45 mm./hr. on the 12th day. This was exceptional. The sedimentation rate in the early stages averaged 19 mm./hr., and was of some value in differentiating from malaria in severe and from hepatitis in mild cases.

Takata-Ara Reaction.—This test was performed 63 times between the 5th and the 24th day of the disease. A moderate positive (++0) was obtained in only one patient, who was also convalescent from prolonged hepatitis. The results were consistently negative in sera giving a positive cephalin-cholesterol flocculation reaction.

Cephalin-Cholesterol Flocculation Test.—This test was performed 211 times in the 50 cases, at various stages of the disease. The cephalin was prepared in the hospital laboratory and the stock cephalin-cholesterol mixture kept in refrigeration. Uniformly negative results were obtained using this mixture in tests of 40 normal individuals. On two occasions the tests with the locally made reagents were set up against a similar series using control reagents obtained from an American central laboratory. Identical results were obtained: these are set out in Table IX. The flocculation was graded in terms of 0, ±, +, ++, +++, and ++++, at 24 and 48 hours. The "mean positiveness" referred to in the tables indicates the sum of positive signs at 24 and 48 hours respectively divided by the number of cases in each group.

TABLE IX.—*Mean positiveness of Cephalin-Cholesterol Flocculation at Successive 7-day Periods*

Day of Disease	No. of Tests	Mean Positiveness	
		24 Hours	48 Hours
1–7	18	0·7	1·3
8–14	31	0·8	1·8
15–21	46	1·5	2·4
22–28	46	1·7	2·7
29–35	42	1·8	3·0
36–42	38	1·5	3·0

In general, flocculation was insignificant early in the disease and slight during pyrexia; it increased rapidly after convalescence had been established in the second week, thereafter falling slowly. This trend was particularly well shown in the group of cases with hectic remittent fever, who were the most acutely ill. Many cases still had strongly positive cephalin-cholesterol flocculation reactions on discharge.

Heterophil Antibody Reaction.—This test was performed 193 times on the 50 patients at different stages of the disease. Horse cells were used, varying in age at the time of the test from 2 to 7 days. The findings are therefore not exactly comparable in successive tests, though extreme care was exercised in the preparation for and execution of the test to make it as uniform as possible. A titre of 1 : 448 (horse cells) was taken as being undoubtedly a significant positive. By this standard 18 cases (36% of the total) gave a positive result at some stage of the disease. A further 13 cases (26% of the total) showed a titre of 1:224. The stage of the disease at which the first positive was obtained was not constant. The average was on the 24th day, the earliest positive being on the 6th day (1 : 1,792) and the latest first positive on the 49th day (1 : 896). The highest titre found was 1 : 7,168 on the 33rd day. In general the titre gradually declined in cases which were positive early, while late-appearing positives showed an increasing titre and a subsequent decline.

Comparing the clinical course of the 18 cases showing a heterophil antibody titre of 1 : 448 or more at some stage with the remaining 32 cases the following points were noted.

(1) *Fever.*—The average duration of pyrexia was not significantly different. The fever showed a slightly greater tendency towards the remittent rather than the continuous type in the cases with positive heterophil antibody reactions.

(2) *Malaria.*—A past history of malaria was obtained in 10 of the 18 cases with titres 1:448 or above and in only 3 of the remaining 32. None of the cases was taking mepacrine at the time of the illness, and repeated blood slides were negative for malaria parasites.

(3) *Physical Signs.*—A greater incidence of lymphadenopathy, enlargement of the spleen, and rose spots was found as under:

Heterophil Antibodies	Cases	Palpable Spleen	Palpable Glands	Rose Spots	Blood-stained Sputum
Titre 1:448 or more ..	18	10	15	8	4
Titre below 1:448 ..	32	3	15	9	6

(4) No undue increase in the total leucocytes or in cells of the lymphocytic or mononuclear series was noted in the cases giving positive heterophil antibody reactions. The undulations observed in the mean absolute values of the various white blood cells conformed with the trends already described, though the number of cases is obviously too small for reliable averages.

(5) The flora of the sputum were similar.

(6) No significant differences were apparent in radiological findings.

(7) All cases had negative Laughlen reactions. The Kahn test was performed on 10 cases showing high heterophil antibody titres, with negative results.

Urine

A specimen of urine was examined when the patient was admitted and subsequently at weekly intervals on the day after the investigations on the blood. In all, 204 specimens were examined from the 50 cases. The findings are set out in Table X.

TABLE X.—*Urinary Findings in Successive 7-day Periods*

Day of Disease	No. of Tests	Bile Pigment (Fouchet) (% +)	Methylene Blue (% +)	Urobilinogen (% Increased)	Albumin (Trace to +) (% Total)
1–7	45	47	76	24	22
8–14	24	27	55	24	9
15–21	39	17	34	0	0
22–28	21	10	14	0	0
29–35	39	3	5	0	0
36–42	36	0	6	0	0

Bile pigment seldom exceeded a trace by Fouchet's method. Six of the 20 cases with liver enlargement showed bilinuria. The methylene-blue test was performed as a routine in view of recent emphasis placed by some American workers on its diagnostic value in infective hepatitis. It appears to be non-specific, to show no direct correspondence with the Fouchet test, and to be potentially misleading if regarded as of diagnostic value in any single condition. A reducing substance (Benedict) was transiently present in 3 cases. Increase in urobilinogen and albuminuria were obviously related to the febrile phase of the disease. The Laughlen test was performed in all cases, with uniformly negative results.

Cold Agglutinins.—Tests (119) for cold agglutinins were done at all stages from the 3rd to the 33rd day. The first 12 tests were carried out both with the patient's own corpuscles and with washed fresh Group O corpuscles. The remainder were done with fresh washed Group O cells alone. Three cases showed agglutination in dilutions of 1:20 and one case in 1:40. The remainder were negative at all stages.

Radiological Findings (Major G. L. Rolleston)

Postero-anterior and lateral films were taken in every one of the 50 cases. In the great majority of cases it was possible to demonstrate a localized area of increased density, which was interpreted as a parenchymatous infiltration, between four and six days after the onset of symptoms. Characteristic *x*-ray findings were: *(a)* The localization of the lesion to one or more broncho-pulmonary segments. The infiltration was found to be pyramidal in shape, with its bases situated peripherally and its apex pointing towards the hilum. *(b)* With the exception of two cases which were "hilar" or central in location the lesions were all peripheral. *(c)* The shadows cast by the infiltration could be described as hazy mottled densities. Structural accentuation and homogeneous densities were also observed in a few cases.

Several other radiological observations were of importance. Of these 50 cases, 30 showed involvement of segments in the lower lobes, 16 in the upper lobes, and 6 in the right middle and left lingular lobes—lesions in the lower lobes therefore predominating. The importance of the lateral film was shown by the following facts: (1) Infiltrations which in the postero-anterior projection appeared hilar in origin were usually situated in the apical segment of the lower lobe and were therefore peripheral lesions. There were only two exceptions to this finding. (2) In several instances the postero-anterior film showed no lesion, but the lateral projection demonstrated the infiltration either behind the heart or in that portion of the lung situated behind the summit of the diaphragmatic dome.

Definite elevation of the diaphragm involving the posterior portion was demonstrated in three cases of posterior basal infiltrations. This finding was interpreted as resulting from a combination of lobular atelectasis and the splinting action of that portion of the diaphragm. There was no radiological evidence of any hilar adenopathy, either in the early or in the resolving stages of the lesion. In this series no case showed evidence of pleural effusion. In cases subsequently encountered during the epidemic five instances of pleural effusion were observed. Two were generalized unilateral effusions, two encysted paravertebral effusions, and one was interlobar.

Regular serial examination was not possible owing to shortage of films. Examination carried out six weeks after the onset of symptoms revealed that resolution was complete in the majority of cases.

Classification of the Radiological Findings

1. Broncho-pulmonary segments involved (62 segments affected in 50 cases; percentages refer to segmental frequency):

	Right	Left
Upper lobe:		
Apical	—	—
Subapical	3 (4·8%)	2 (3·2%)
Axillary	6 (9·7%)	5 (8%)
Pectoral	—	—
Middle lobe:		
Anterior	3 (4·8%)	1 (1·6%)
Axillary	1 (1·6%)	1 (1·6%)
Lower lobe:		
Apical	4 (6·4%)	2 (3·2%)
Subapical	—	4 (6·4%)
Posterior basal	9 (14·5%)	9 (14·5%)
Axillary ,,	1 (1·6%)	—
Anterior ,,	1 (1·6%)	—
Hilar	—	2 (3·2%)
Zones:		
Upper	1 (1·6%)	—
Middle	2 (3·2%)	2 (3·2%)
Lower	1 (1·6%)	2 (3·2%)

2. Type of shadow cast by the lesion: Hazy mottled density, 43 (86%); homogeneous density, 2 (4%); structural accentuation, 5 (10%).

3. Diaphragmatic elevation: 3 (6%).

4. Degree of lesion: Minimal, 12 (24%); moderate, 33 (66%); extensive, 5 (10%).

5. Bilateral infiltrations: 4 (8%).

6. Cases with two or more segments involved: 12 (24%).

Differential Diagnosis

Most cases were referred to hospital with a diagnosis of pyrexia N.Y.D. or malaria. In the period before the development of characteristic pulmonary signs the diagnosis was often in doubt between malaria, infectious mononucleosis, fevers of the enteric group, meningo-encephalitis, "influenza," and infective hepatitis, by virtue of the prominence of one or other of the diverse clinical features already described. Cases showing pulmonary signs on admission had to be differentiated from other forms of pneumonia. The absence of leucocytosis, pulmonary consolidation, or dyspnoea, and the relative bradycardia, were helpful in diagnosis. During the epidemic some cases *not* included in this series presented with identical prodromal symptoms and onset but with a leucocytosis of from 15,000 to 30,000. Such cases received chemotherapy with apparent benefit, despite the fact that the subsequent radiological examination showed strictly segmental lesions. It was presumed that these cases were primarily atypical pneumonia with secondary infection in the affected lobule.

Treatment

All cases were isolated until the temperature had been normal for one week or until productive cough had ceased. The R.A.P. orderly and hospital librarian developed primary atypical pneumonia during the course of the epidemic. All attendants wore mask and gown. Patients were kept in bed until they had been at least ten days apyrexial and until abnormal physical signs were no longer detectable. A few preferred to be propped up on pillows; the remainder lay flat. A light diet in the febrile phase was generously supplemented when the appetite returned in convalescence.

Treatment in the early stages was confined to general nursing measures and the relief of symptoms. Constipation often required attention, and drenching sweats necessitated frequent sponging and change of clothing. A.P. codeine tablets were freely used for headache, and proved generally adequate though tending to increase the already profuse sweating. At times morphine was required to promote sleep. Sulphadiazine (25 g.) was given in six cases and penicillin (365,000 O.U.) in one with no apparent effect. Breathing exercises under the guidance of the physiotherapist were begun two days after the temperature had fallen, and progressive general exercises were carried out during convalescence. Some cases were held in hospital longer than was strictly necessary in order that serial laboratory studies might be continued. All were transferred to the convalescent depot before rejoining their units. Some tended to emphasize minor functional complaints during convalescence in hospital.

The importance of this disease in epidemic proportions in military institutions is apparent from the fact that the *minimum* period of absence from duty was six weeks.

Comment

It is not proposed to discuss in detail the observations on this series of cases or to review the relevant literature. The positive heterophil antibody reactions are the most provoking finding, but it would appear desirable that these investigations should be repeated under ideal conditions and with appropriate guinea-pig kidney absorption differentiation before conclusions are drawn. The significance of the cephalin-cholesterol flocculation test is further called in question in the light of the findings in this series.

Local variations in clinical and laboratory findings in different epidemics are already well established. A case in point is provided by the negative reactions for cold agglutinins in this series. This preliminary communication has been made as it seemed possible that a new and interesting avenue for research exists in the study of the heterophil antibody reaction in primary atypical pneumonia.

Summary

Clinical and laboratory findings in a series of 50 cases of primary atypical pneumonia are reported.

Among the findings were: (*a*) Increasingly positive cephalin-cholesterol flocculation reactions during the course of the disease in the majority of cases. (*b*) The presence of a positive heterophil antibody reaction (horse cells) to a titre of 1: 448 or higher in 36% and to a titre of 1: 224 or higher in 62% of the cases.

Profitable avenues for further research seem to be indicated by these findings.

The importance of the lateral film in diagnosis and accurate location is stressed.

We are indebted to Col. I. S. Wilson, O.B.E., *M.C.*, E.D., commanding officer, 2 N.Z. General Hospital, for his constant interest and encouragement; and to Brig. G. W. Gower, C.B.E., E.D., D.M.S., 2 N.Z.E.F., for permission to publish this paper. We are also indebted to the sisters, medical orderlies, and laboratory staff, without whose assistance the work could not have been completed.

The 34th annual report of the Victorian Bush Nursing Association, published in Melbourne, opens with a memorial tribute to Sir James W. Barrett, founder of this widespread organization and stalwart champion of its interests, who died on April 6, 1945. "From one trained nurse in 1911 to 67 hospitals and 15 centres to-day is an amazing measure of progress made possible only by Sir James Barrett's unremitting care and consummate skill as organizer, financier, counsellor, and publicist. . . . We who worked with him early realized that bush nursing was among the manifold interests of his busy life, and that he would allow no obstacle, no hindrance, to impede its progress. . . . In his death the V.B.N.A. has lost a great organizer. His inspiration, always a chief factor in its success, will, however, long remain." During the year ended June 30, 1945, the total number of cases attended by Bush nurses was 20,185; of these the number attended in Bush nursing hospitals was 16,158, and 4,039 attended at the centres. The number of maternity cases was 3,125. With the end of hostilities the Association has had to face problems which require a satisfactory solution; many of the older hospitals are in urgent need of renovations and extensions, while numerous requests come for the establishment of new hospitals. As the period of the war lengthened extra burdens, apart from nursing duties, fell on the nursing staff of the Association, who responded in a very noble manner.

FRACTURED PATELLA

AN ANALYSIS OF 54 CASES TREATED BY EXCISION

BY

R. BROOKE, M.S., F.R.C.S.

In every case the operation had been performed from five to fifteen years previously. Twenty-nine were examined personally, 6 replied to a questionary, 3 had died, and 16 had left the district. The rather large number of the latter is not surprising, as the investigation was carried out in a rural district under immediate post-war conditions. Of 35 examined personally or by questionary, 19 had sustained comminuted and 16 transverse fractures, with varying degrees of separation of the fragments. Twenty-five were males and 10 were females. The average age at the time of operation was 40 years. At the examination attention was paid to range of movement, power, presence or absence of full extension, and deformity, and in each case the knee was *x*-rayed for osteo-arthritic changes.

In the questionary the patients were asked:

How long were you away from work following the operation?
Can you do your present work, and what is it?
Is the knee better or worse, or the same as before operation?
Can you notice any difference between the two knees?
Is there any weakness in the knee?
Can you put the knee out straight?
Can you walk or run upstairs?
Does the knee look unsightly?
Are there any other facts about the operation which are of interest?

All the patients returned to work on an average from four to eight weeks after the operation, depending on the nature of the employment and the individual. All those whose operation was successful were doing their pre-accident work within six months. Three patients who had died were working until their death, and one of them was actually killed by a flying bomb while at work up a ladder. Five of the males (Cases 26, 27, 30, and 31) have served through the war, Category A1, and have seen service abroad. They all say that the absent patella was not noticed by the medical officer when they joined, and that they were able to carry out their military duties quite normally. One female (Case 7) has been, and still is, in the Land Army doing full work.

In none of the cases examined were osteoarthritic changes demonstrated by *x* rays. In 27 the function of the affected limb was normal in every respect. In the remaining 10 there was some disability: seven of these were transverse, three comminuted fractures. Two (Cases 9 and 24) were transverse fractures which had previously been wired and in which the wire had broken, in one leaving a septic sinus. One (Case 13) was a refracture of a transverse fracture after suture nine months previously. One (Case 14) had a coexisting osteo-arthritis of the opposite hip which interfered with post-operative treatment. One (Case 18) was a compensation case —a Post Office employee who, from the first, was not co-operative and did nothing to help himself. In the remaining four the poor results are attributed to a breakdown in the operative or post-operative technique.

Discussion

Excision is advocated both for transverse and for comminuted fractures. The details of the operation and the after-treatment have been described before (Brooke, 1937a, 1937b). It is difficult to understand why excision is accepted as a satisfactory measure in the case of comminuted fractures, but caution is shown in advocating its use in the transverse variety. However much the lateral expansions of the quadriceps aponeurosis have been torn, and however wide the separation of the two halves of the patella may be, once the tears in the lateral expansions have been repaired, and the edges approximated, the condition is reduced to one similar in every way to the comminuted variety, before the bone is removed. If the aponeurosis is sewn properly there is no reason why the result should not be equally good. Successful results depend upon two factors:

1. The use of non-absorbable suture material both to repair the torn lateral expansions of the quadriceps and to sew back

the flaps of aponeurosis which have been raised from the anterior surface of the patella before the bone is removed. Catgut or kangaroo tendon is not sufficient. In the present series the interval was at first closed by fascial strips, but these were found to be unnecessary, and silk alone was used. Later still, unbleached linen thread was found to be more satisfactory and to give less tissue reaction.

2. It must be appreciated that the injury is really a major injury to the knee-joint and, as in all such injuries, quadriceps wasting will be rapid. Quadriceps insufficiency develops during a period not of weeks but of days, and half an inch of wasting in a few days may take months of physiotherapy to regain after the operation. For this reason early operation is essential—usually on the fifth day after the accident, or as soon as the skin over the operation site is sufficiently healthy. For a similar reason the patient must be got up early after the operation, and, if a wool splint is used, this can be done with impunity on the fifth or sixth day, the patient walking with two sticks or between two chairs, using his own quadriceps actively, but not at first bending the knee. Back splints or plaster must be avoided at all costs. Post-operative physiotherapy is not as a rule necessary, but may be used when required. The operation must be performed by the bloodless method.

Case Reports

Case 1.—Male aged 35. Twelve years previously he fell and sustained a transverse fracture of the left patella with separation of the fragments. These were removed and the gap in the aponeurosis was closed with interrupted sutures of silk. Fourteen days after operation he was discharged from hospital, and four weeks later returned to work. On examination the function of the knee was normal; range of movement full, with no loss of power; no symptoms. The patient says he can distinguish no difference between the two limbs. Skiagram shows no osteoarthritic changes. No deformity.

Case 2.—A plumber aged 51 fell and sustained a comminuted fracture of the right patella. Fragments were removed and the interval repaired with silk. Now, after 13 years, he has full function, no limitation of movement, normal power, no limitation of full extension, and no deformity. Skiagram shows no osteoarthritic changes. He has been doing his full work as a plumber ever since, and says he can distinguish no difference between the two limbs.

Case 3.—A domestic servant aged 36. Transverse fracture—moderate separation. Fragments removed; interval repaired with silk. Back at work in one month. Now, 10 years after her operation, she says she can notice no difference between the two legs; if anything, the other one is not so good, as she gets rheumatism in it. Movements full; power normal; no deformity; no loss of full extension. She can run upstairs. Skiagram shows early osteoarthritis with lipping of patella in other knee. In the affected knee no osteoarthritic changes were seen.

Case 4.—Female aged 40. Sustained a transverse fracture of the left patella, which was excised 7 years ago, and a transverse fracture of the right patella, which was excised 5 years ago. In both cases quadriceps expansion was sutured with silk. The function is full; no limitation of extension; power normal. No O.A. changes in either knee. A little deformity in the right knee, but not in the left. Doing her full work as a packer.

Case 5.—Female aged 52. Transverse fracture with wide separation 9 years ago. Fragments removed and interval sutured with silk. Discharged home 4 weeks after operation. Now function and movements are full; no weakness, no symptoms, and no deformity. Skiagram shows no O.A. changes.

Case 6.—Male aged 58. Comminuted fracture of patella. Fragments removed, repair by silk 6 years ago. Now doing full work as a navvy. Can run upstairs. Can detect no disability whatever. Function, power, and movement full; no deformity. Skiagram: No O.A. changes.

Case 7.—Female aged 32. Transverse fracture 9 years ago. Is now in Land Army doing full work. Passed Grade 1 (knee not noticed). Function now full; no symptoms, no deformity; range of movement full, extension full. Skiagram: No O.A. changes.

Case 8.—Male aged 40. Transverse fracture with separation operation 5 years ago. Sutured with thread. On examination power, range of movement, and extension now full. A grocery porter, he does a full day's work, cycling all day, and notices nothing wrong with his knee.

Case 9.—Male aged 67. Transverse fracture through old wired patella; wire septic, and sinus through skin wired and patella excised. Interval sutured with catgut 8 years ago. Now has impaired function—flexion to right-angles only. Knee a little deformed; power impaired; extension full. The patient says that the knee is weak, but is much improved since the operation (excision). Before, he could not stand or walk on it. Skiagram shows no O.A. changes.

Case 10.—Female aged 64. Fell 5 years ago and sustained a comminuted fracture of the patella. Repair with thread. Now she complains of some weakness and difficulty in getting upstairs. Function is good, extension full. She can walk well, and does her shopping. There is no pain. She can stand on the affected foot with the knee bent. There is gross rheumatism in the opposite hip. No deformity of knee. Skiagram: No O.A. changes.

Case 11.—Male aged 68. Transverse fracture of patella. Patella removed 5 years ago. Now complains of weakness and difficulty in getting upstairs. Walks with a stick. Movements are full; there is no detectable weakness of the quadriceps; no deformity; extension full. A frail man, older than his years. Not working.

Case 12.—Male aged 62. Comminuted fracture of left patella. Bone removed 7 years ago. He is now working full time as a labourer. He says that from the time he recommenced work he has noticed no difference in the two limbs. In fact, he was not quite sure that the injured knee was not the better. No deformity; extension full; range and power normal. Skiagram: No O.A., but slight O.A. lipping of patella of other knee. He demonstrated that he could run upstairs.

Case 13.—Female aged 35. Old transverse fracture with refracture after suture 9 months later. Patella excised 10 years ago. Repair with thread. Movements full; no weakness; no deformity; extension full. She says that the knee does not interfere with her life in any way.

Case 14.—Male aged 63. Transverse fracture with wide separation. Excised 10 years ago; sutured with silk. Now extension and range of movement full; no deformity. Skiagram: No O.A. changes. The patient complains of slight stiffness going up and down stairs. He says he can walk 10 to 15 miles without getting tired, and can do most things without difficulty, but for years has been restricted in his activities by an old injury to the right hip. Skiagram shows old O.A. of hip supervening on what appeared to be an adolescent coxa vara deformity.

Case 15.—A carpenter aged 57. Sustained a transverse fracture of the left patella 10 years ago and a transverse fracture of the right patella 8 years ago. In both cases the injury was due to an accident—the first at work, the second a road accident. In both cases the fragments were removed and the interval repaired with thread. Examined 10 and 8 years after his accidents, he says he has got on well. He can find no difference from before the accidents. Both legs are equally good. He does his full work as a carpenter. Movements full, extension full; no deformity; no loss of power; no thickening of the knees. Skiagram: No O.A. changes. He demonstrated that he could run upstairs with ease.

Case 16.—Female aged 58. Transverse fracture with separation 5 years ago. Was walking five days after operation. Now says that knee is as good as before the accident; can do all her own housework and can kneel without discomfort. Walks without limp. Extension full; power and movement normal; no deformity. No O.A. changes on *x*-ray. No symptoms.

Case 17.—Female aged 57. Transverse fracture 5 years ago with separation of fragments. Repair, using thread. Now on examination extension is not full; can get upstairs with difficulty. The knee looks a little ugly; it is still improving. Otherwise, function normal. In this case there was gross separation of the fragments. The other leg is weak.

Case 18.—Male aged 62. Sustained a transverse fracture at work 12 years ago. The fragments were excised and the interval closed with silk. From the first this patient, a postman, was not co-operative, and the question of compensation was always present. He is now walking well; there is no deformity; movements full. Complains of some weakness. Skiagram: Negative for O.A.

Case 19.—Female aged 53. Sustained a comminuted fracture of the left patella 14 years ago. Fragments were removed and interval repaired with fascia. Now says that there is not the slightest difference in the two sides. She can run upstairs, and has done so for many years. She says she can walk miles. Extension, power, and movement full. Skiagram: No O.A. changes. No deformity; no symptoms.

Case 20.—Male aged 30. Transverse fracture with separation. Removal 11 years ago; sutured with silk. He has been in the Army—accepted A1; operation scar not noticed. Before the war he played professional football after the operation. Movements full; no deformity; extension full. Skiagram: No O.A. changes. He says the knee is perfect. He can run upstairs.

Case 21.—Male aged 60. Stellate fracture; removal and suture with thread 6 years ago. Patient says he would not know that the operation has been done. He works as a navvy. He was back at work 18 weeks after the accident. He can run upstairs, and no loss of power or function could be detected. A skiagram showed no O.A. changes in the joint.

Case 22.—Male aged 35. Transverse fracture with separation. Patella removed; sutured with silk. Examined 10 years later says he is working all day and would not know that anything was the matter with his knee. By occupation he is a labourer. On examination there was no deformity, weakness, or limitation of full extension or other movement. Skiagram: No O.A. changes. He demonstrated that he could run upstairs.

Case 23.—Male aged 45. Transverse fracture of patella 7 years ago, sutured with thread. He has worked all the time as a labourer. No difference between the two limbs could now be detected. Skiagram: No O.A. changes.

Case 24.—Male aged 22. Transverse fracture of patella previously wired, with breaking of wire. Wire and bone removed; sutured with silk 10 years ago. There is no deformity and only slight impairment of function. Flexion limited 20%; extension full; some weakness. Skiagram: No O.A. changes. He has been in an Infantry regiment since the beginning of the war. Has served in Egypt and Italy, and his category is A1.

Case 25.—Female aged 50. Stellate fracture 5 years ago; removal; suture with thread. Extension full; walks upstairs well. Says that knee is as well as before the operation. No deformity. Does all her own housework.

Case 26.—Male aged 38. Transverse fracture left patella, excised 7 years ago. Before the war worked in an office. Was passed A1 into Army and has served abroad during whole of war. Has never had a moment's trouble with the knee, and has seen some hard fighting. No difference between the two knees could be detected. Skiagram: No. O.A. changes.

Case 27.—Male aged 34. Comminuted fracture right patella 10 years ago. Interval closed with silk. By occupation a carpenter, he resumed work in four weeks and has served through the war—Category A1. He says that he cannot distinguish any difference between the two limbs. He can run upstairs with ease. Extension is full. Skiagram shows a few spicules of bone in the extensor tendon, but no O.A. changes.

Case 28.—A labourer aged 51. Sustained a stellate fracture of the left patella 7 years ago. He returned to work six weeks after operation and has worked ever since. The patient notices no difference between the two sides. Power good; no deformity or limitation of extension; no symptoms. Can run upstairs. Skiagram: No O.A. changes.

Case 29.—Male aged 41, a builder's labourer. Sustained a comminuted fracture of the patella. Removed 8 years ago; interval closed with fascia. Returned to work 3 weeks after the operation. No difference can now be detected in the two limbs. The patient says that, if anything, he believes that the affected limb is stronger than the other. Thus, when working on a ladder he can stand on the affected side without tiring for a longer time than on the normal side. Skiagram shows no O.A. changes.

Cases Examined by Means of Written Questionary

Case 30.—An Army officer aged 37. Transverse fracture of patella; removed 11 years ago. Away from work for 6 weeks. The knee is better than before the operation. No weakness; extension full. Can run upstairs. Knee does not look unsightly. Patient remarks: "I have played Rugby football and other games and swum a great deal without any trouble." Spent 3 years on active service abroad. Army Medical Category A1.

Case 31.—A sapper aged 33. Transverse fracture operation 11 years ago. Away from work 6 weeks. Can do present work. Knee is the same as before the operation. Can notice no difference between the two knees. No weakness, but damp weather makes the injured knee ache. Extension full. Can run upstairs. Knee does not look unsightly. Patient remarks: "It has stood up to all the Army training and sports, and I still play football." Army Medical Category A1.

Case 32.—Male aged 46. Comminuted fracture; removed 7 years ago; sutured with thread. Away from work 4 weeks. Can do present work driving 6-ton lorry. Can notice no difference from before the operation. Knee is flat to look at. No weakness; extension full. Can run upstairs. Knee does not look unsightly. Patient's statement: "The knee, in my opinion, is very satisfactory, causing me no trouble in any way, being able to do my work, which consists of climbing and jumping all the time."

Case 33.—Male aged 32, builder's labourer. Stellate fracture. Operation 13 years ago. Returned to work in 12 weeks. Knee is the same as before the operation. Can notice no difference between the two knees. No weakness; extension full. Can run upstairs—does ladder work. Knee does not look unsightly. Patient says: "I have forgotten all about the operation. I do a lot of cycling and feel no pain at all."

Case 34.—Male aged 45. Stellate fracture; removed 5 years ago. Staff officer B.A.O.R. Knee same as before operation, but with slight weakness. Extension full. Can walk upstairs, but cannot run. Personal statement: "For all normal purposes the knee is satisfactory, but not for games. If I have to be on my feet for long periods the knee aches."

Case 35.—Female aged 45. Stellate fracture; operation 5 years ago. Cannot do housework. Knee is worse than before operation, and is weak. Extension not full. Cannot run upstairs. Knee looks flat. Personal statement: "The knee lets me down without warning. There is also wasting of the leg above the knee and swelling at times."

Three patients have since died: of these, two were males. Two fractures were transverse, one comminuted. In two cases (both transverse fractures and males) both were at work until their death. One of these was the window-cleaner who was killed by a bomb while up a ladder.

No reply was received from 16 patients—5 transverse fractures and 11 stellate fractures.

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VITAMIN C CONTENT OF HOME-COOKED VEGETABLES

BY

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Much attention has recently been focused on the level of vitamin C intake among various groups of the population. This work has taken the form of analysis of various types of canteen meals (Booth *et al.*, 1942), calculation of intakes by the study of menus (Widdowson and McCance, 1942), vitamin C saturation tests (Wormall and Francis, 1942), and controlled laboratory tests on cooking (Olliver, 1940, 1941, 1943). Harris and Olliver (1943) investigated by chemical analysis the vitamin C intake at a small residential home, but I am not aware of any attempt having been made to measure directly the vitamin C content of meals cooked at home by ordinary domestic methods. The chief aim of the present work was to investigate by direct analysis the vitamin C content of samples of home-cooked vegetables and the losses incurred during cooking. Since there has been much controversy about the feasibility of calculating the vitamin C content of vegetables from tables of raw values and from details of cooking methods employed, information about the timing and method of cooking was obtained for most of the samples. It was therefore possible to calculate the vitamin C content for each sample, and to compare the calculated and determined values.

This paper describes three surveys—one carried out in a university town, and two in northern industrial cities. Most of the samples were collected by field workers of the Wartime Social Survey, who were making a dietary inquiry for the Ministry of Health and the local school medical officers, and who also obtained information on the methods of preparation and cooking of the vegetables. The samples came from households of widely varying income, and each set of samples (e.g., potato, cabbage, and gravy) were from a different household.

Method

Weighed dark-green glass bottles containing 50 c.cm. of 20% metaphosphoric acid were taken to the housewives by the field workers, who had been given instructions for obtaining representative samples of potatoes and green and root vegetables. The samples were collected only while the meal was being eaten. The bottles were returned to the laboratory, re-weighed, and the contents extracted and estimated, usually the same day or not later than the next day, by the method of Harris and Olliver (1942). The housewife was asked for details of (*a*) the method of preparation (quartered, halved, or shredded); (*b*) the cooking of green vegetables (amount of water used, whether the vegetable was a quarter, half, or completely covered); and (*c*) the duration of keeping hot after cooking or of reheating. For potatoes and root vegetables the inquiries covered the length of time of keeping hot and of reheating, and whether or not the vegetables had been mashed.

Samples of gravy were taken in some cases when cooking-water had been used in its preparation. From data obtained in this way and from the results of the experiments of Allen and Mapson (1944), Olliver (1941), and Jenkins (unpublished), the vitamin C contents of the vegetables were calculated.

The most accurate method of estimating the influence of the volume of cooking-water on the vitamin C content of green vegetables is to weigh the cooked vegetable and measure the volume of the water *after* cooking. It was not possible to make these measurements in the present survey, and a less accurate method had to be adopted—namely, to judge whether the vegetable was a quarter, half, or completely covered by the cooking-water. This is not wholly satisfactory, since the important ratio is the final volume of water to the weight of cooked vegetable, and this will vary with the size of saucepans even when the degree of covering is kept constant. Assuming that the pan is of a size conveniently filled by the vegetable, then the volumes of water necessary to cover the vegetable completely, half, or quarter would, according to calculations, permit retentions of the order of 20, 40, and 60% of the vitamin C content of the raw vegetable. The loss during keeping hot or reheating of green vegetable was judged from the experiments to be 50% per hour. No account was taken of whether the greens were placed in cold water and gradually brought to boiling point, or were plunged directly into boiling water, as this factor does not appear to be important in affecting the vitamin C loss in cooking on the domestic scale (Jenkins, unpublished), but it is important when large amounts of vegetables are being cooked (Macrae, 1944). In the case of root vegetables, oxidation and extraction during boiling were assumed, on the basis of the experiments mentioned above, to cause a fall to 50% of the raw value, with further destruction at the rate of 50% per hour if kept hot, unless the vegetables had been mashed, when the rate of destruction was about three times greater (Jenkins, 1943; Lampitt *et al.*, 1943).

The average vitamin C content of the raw potatoes available at the time of the survey was found by analysing a number of pooled samples obtained from several shops in the districts. The values found (mg./100 g.) were 20 in September and 9 in April. No value for raw green vegetables was obtained, as it was not possible to collect and estimate a sufficiently large number of raw samples to make the result significant for so variable a vegetable as cabbage. A value of 70 mg. per 100 g. was taken as the average value for raw cabbage (Olliver, 1943). The average calculated values are given in Table II.

Results

The results are divided into three parts—first, a small-scale survey carried out in the winter of 1942–3; secondly, 200 samples collected in the industrial cities in Sept., 1943; and, finally, 100 samples from the same cities in April, 1944. Some of the analyses of samples collected during April were carried out by Dr. L. P. Kendal, who has kindly allowed me to quote his results.

The results of the analyses are set out in Tables I and II. The figures obtained for gravies were often anomalous in that

TABLE I.—*Results Obtained in Preliminary Survey; Winter, 1942–3*

	Nov./Dec., 1942			Jan./Feb., 1943		
	No. of Samples	Vitamin C (mg./100 g.)		No. of Samples	Vitamin C (mg./100 g.)	
		Average	Range		Average	Range
Potatoes	12	10·5	8–16	9	6	3–8
Cabbage	5	22	13–47	1	11	—
Brussels sprouts ..	4	50	39–68	7	29	17–41

their vitamin C content exceeded that of the vegetable water from which they were prepared, indicating the presence of reducing substances other than vitamin C, formed during cooking, which interfere with the estimation (Mapson, 1943). Since the method of assaying vitamin C separately from these substances is time-consuming it was not possible to apply it, and the results obtained on gravies have not been quoted. A few samples of other vegetables (e.g., swedes and onions) were analysed, but the numbers were too small to justify publication.

TABLE II.—*Found and Calculated Vitamin C Values from Industrial Cities*

	September, 1943					April, 1944				
	No. of Samples	Vitamin C (mg./100 g.)				No. of Samples	Vitamin C (mg./100 g.)			
		Av.	Range	Calculated			Av.	Range	Calculated	
				Av.	Range				Av.	Range
Potatoes .	77	10·5	2–26	10·5	2–15	50	5	1–10	4·5	1–5
Cabbage .	30	13	3–38	17·0	2–42	14	35	7–63	25	14–42
Carrot .	14	3	2–5	—	—	12	2	0·5–5	—	—
Runner beans	9	5	2–11	—	—	—	—	—	—	—
Cauliflower	6	12	3–28	—	—	6	37	11–67	—	—

Discussion

The first survey of 1942–3 was on so small a scale that by itself no significance could be attached to the results; but the figures suggested that the losses of vitamin C during cooking, in these homes, were not excessive. Forty samples were taken from 21 meals, and, assuming that each meal contained 150 g. of potato and 100 g. of the second vegetable, which are reasonable helpings, all but eight of them provided 30 mg. of vitamin C—that is, the daily requirement suggested by the League of Nations Commission—and, of these eight, only four provided less than 24 mg. Cooking loss was responsible for the low vitamin C in only one of these meals; in another meal the second vegetable was carrots (providing only 2 mg.), and the other two contained no vegetable other than potato. The average content per meal was 43 mg. for November/December and 33 for January/February.

Many of the housewives who provided samples in the two larger surveys had completely covered their green vegetables with water and therefore increased the proportion of soluble nutrients extracted during cooking. A few housewives followed the Ministry of Food's instructions for cooking greens, with the result that their product contained about three times as much vitamin C as the general average. The finding that the vitamin C content of cooked cabbage in spring (35 mg./100 g.) was so much greater than in autumn (13 mg./100 g.) is unexpected, and is probably fortuitous, as only 14 samples were collected in April.

Using the figures obtained in the larger survey, a typical meal, containing potato and greens, was estimated to provide about 28 mg. of vitamin C in September and not less than 20 in April. If the second vegetable were carrots, or if, as sometimes occurred, no second vegetable were served, then the meal would provide only about 15 mg. in September and 7 or 8 mg. in April. These amounts of vitamin C were probably the total day's intake in most families, as typical wartime breakfasts and teas contribute little or no vitamin C. It would seem that propaganda aiming at increasing vitamin C intake should place as much stress on the importance of including green vegetables in meals as on methods of reducing cooking losses.

Many households did not have a cooked meal at home, as all members of the family received a canteen or British Restaurant meal, the vitamin C content of which tends to be low.

Comparison of Found and Calculated Values

Comparison of *average* vitamin C values of the vegetables, as determined by analysis, with those obtained by calculation shows remarkably good agreement for potatoes and fair for cabbage (Table II). The correlation between calculated and determined values for *individual* samples is, however, low but significant ($r=0.52$ for 38 samples of cabbage; 0.39 for 58 samples of potato in September and 0.59 for 46 samples in March; P is less than 0.01 in all cases). The data collected in this survey therefore indicate that it is not possible to calculate the precise vitamin C content of an individual meal, but that the averages of figures so obtained are in close agreement.

Although it appears not to be possible to calculate accurately the vitamin C content of a meal it is possible with most meals to say whether it is very low or very high. When calculations indicated that a meal contained, say, less than 10 or more than 30 mg. of vitamin C, the analysis usually confirmed this general grouping, but there were many discrep-

ancies. It would seem, therefore, undesirable to place much reliance on calculations of the vitamin C content of individual meals unless one obtains detailed and accurate information on the method of cooking (Jenkins *et al.*, 1945).

Summary

The vitamin C contents of over 300 samples of vegetables cooked in ordinary households were determined in 1943–4, and the main average results were: (mg./100 g.) potatoes (September) 10.5, (April) 5; cabbage (September) 13, (April) 35. Average meals containing potatoes and greens provided between 20 and 28 mg. of vitamin C, according to season. Average meals containing no green vegetables provided less than 15 mg. vitamin C in September and less than 8 in April. The correlation between vitamin C values as analysed and those calculated from information about the methods of cooking employed was poor in individual cases, but the average agreed fairly well, especially with potatoes.

I gratefully acknowledge the assistance of the Wartime Social Survey in collecting the samples, of officials in the two cities for laboratory accommodation, and of Dr. E. R. Bransby, of the Ministry of Health, for much helpful discussion.

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NEUROLOGICAL COMPLICATIONS FOLLOWING PREFRONTAL LEUCOTOMY

BY

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As an increasing number of prefrontal leucotomy operations are performed and various techniques are employed, the question constantly arises how far posteriorly one should operate to achieve the maximum mental amelioration. Meyer and Beck (1945), studying necropsy material, advised against section at a posterior level, and Knight (1943) came to a similar conclusion when performing the operation further back than 3 cm. behind the orbit. The case reported here is of neurological interest and sheds further light on the above problem.

Case Record

A woman aged 27 was admitted to Netherne Hospital, Coulsdon, on Oct. 3, 1944, as a case of schizophrenia. In this attack, a few days before her admission, she started to behave strangely, talked about her eyesight, and was worried that she might become blind. On examination she answered questions monosyllabically and in "telegram style." She giggled and grimaced, neglected herself, and was faulty in her habits. Physically she did not show any signs of active disorder, but had a slightly deformed right foot. After a short observation period she received a course of electric convulsion therapy, resulting in some improvement, and was taken home by her parents against advice. In a few days, however, she was readmitted. She was then obviously hallucinated, shouted "Don't hit me," "She is not there," etc., but otherwise her speech was incoherent. She was agitated, restless, excitable, and negativistic; she grimaced, giggled, was completely lost to her environment, and was unclean in her habits. Convulsion therapy was repeated, but as soon as the intensive treatment terminated she relapsed into an excited state again.

She comes of a poor stock. She was average at school and rather shy. After schooling, at the age of 15 she had a transient "nervous state," when she was full of worries about her eyesight; though she recovered and did domestic work she had been "odd and peculiar" since her first attack. She was redirected to N.A.A.F.I. a few weeks before her first admission.

In this case, instead of any further shock treatment, leucotomy was considered. On Aug. 22, 1945, a bilateral horizontal prefrontal leucotomy was performed (Mr. E. J. Radley-Smith) using a MacGregor-Crumbie leucotome. The usual technique is to insert the instrument at a point 3 cm. behind the external angular process and 3 cm. above the zygoma, having first identified the Sylvian fissure. This approach can be used for either a horizontal or a vertical section by pointing the instrument in the appropriate direction and making the incision in the required plane. In this case the leucotome was directed towards a point 1 cm. above and 2 cm. behind the supraorbital notch and the section made horizontally; it was thought that by this technique one is able to cut more posteriorly than at our usually performed operations. There was no unusual degree of intracerebral haemorrhage during the operation.

The morning after the operation she was fully conscious, orientated, but had a fine Parkinsonian tremor in the left hand with "pill-rolling" movements. There was no difference in tone in the arms or legs, and the deep reflexes in all four extremities were equal. Abdominal reflexes were present in all four quadrants, and the plantar responses were flexor. She was incontinent. To avoid disturbing her in her post-operative state no further neurological examination was carried out. The same clinical picture prevailed for the next three days, and the tremor of the left hand was occasionally accompanied by tremor of the left foot. On the fourth post-operative day she regained sphincter control, the tremor subsided, leaving some clumsiness of the left hand, and she had an upgoing toe on the left side. Mentally she was apathetic.

On the seventh post-operative day she showed a definite weakness of the left arm and hand. Deep reflexes: L.>R., with a left Babinski. On the eighth post-operative day she developed the following neurological signs and symptoms, localized to the left side: tendency to fall to the left, loss of postural sensibility, dysmetria, and failure in past pointing of the left arm. There was a loss of pinprick sensation over the lower half of the left arm, and a moderate astereognosis—not being able, with her eyes closed, to name objects placed into her left hand. The tonus of the left arm was decreased, but the reflexes were increased on the left arm as well as on the left leg. Abdominal reflexes were present; the upgoing toe at the left side persisted. There was also apraxia, and she could not use the scissors, a pen, a brush, keys, or a lighter with her left hand. After two days the condition became more severe; in addition to the above symptoms, weakness of the left arm became more pronounced, and left facial weakness developed, with loss of the blinking reflex. No general signs of increased intracranial pressure were present. The next few days showed rapid improvement of her condition, and on the 17th post-operative day she had no facial weakness, very slight weakness of the arm, no apraxia, no upgoing toe, but the left abdominal reflexes were absent. She became cheerful, talked spontaneously about her plans for the future, did not grimace, and did not indulge in sudden and incongruous laughter and giggling. She did not know what happened to her arm and was indifferent to the fact that her hair was shaved off. She occupied herself with knitting, but showed marked perseveration in her actions; she was unable to stop any movements she started—e.g., if asked to make a knot she went on making knots, and did not stop until she was commanded definitely to do so. Perseveration was also noticeable when she was asked to copy a geometrical figure from memory. The next five days brought further mental amelioration; she worked in the occupational department, and was pleasant and co-operative. Neurologically no sign other than a very slight clumsiness of her left hand and arm, and very slightly increased tendon reflexes of the left arm and loss of left abdominal reflexes, remained permanently. On Sept. 18, 1945, she became restless and negativistic, and on the following day did not return to the occupational department.

Her mental condition progressively deteriorated. On Sept. 22 she was lying in bed, keeping under the bedclothes, actively hallucinated. When spoken to she giggled and gave bizarre answers, making statements that the medical officer was her father. In the next fourteen days such autistically inclined hallucinatory states alternated with outbursts of sudden aggression, when she hit the ward sister and attacked other patients. At the time of reporting—Nov. 21, 1945—there is but little improvement in her mental condition in comparison with the pre-operative state. She is more apathetic than dissociated, and is granted short leaves of absence from the hospital. She is gaining weight rapidly.

(Since this report was written the patient has made a progressive improvement and been discharged from hospital.)

Commentary

The probable clinical evaluation of the case is that on the right side the operative incision was accompanied by an oedema or perhaps by bleeding. The developing neurological signs and symptoms made it possible to locate the induced lesion, which probably affected partly the striate body (tremor), partly the radiation of the callosal body (apraxia and apathy), and encroached upon the anterior limb of the internal capsule (weakness of upper limb and reflex changes). The perseveration, according to Freeman and Watts (1942), indicates that "too much of the frontal lobes have been sacrificed." As the oedema subsided the comparatively slight neurological symptoms, as the result of the operation, became evident. Although the

same technique was employed bilaterally, the signs and symptoms were noticeable only on the left side of the body.

It is of less importance for the purpose of this report to decide whether the partly transient neurological signs and symptoms were due to oedema or haemorrhage. In either case, the symptoms and signs indicated the level of the operative lesion, and it seems that when the section is carried out posteriorly, as in the reported case, no better therapeutical results can be expected than from the conventionally performed operation.

I wish to thank Dr. E. Cunningham Dax and Mr. E. J. Radley-Smith for their helpful criticism.

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PRIMARY BENIGN TERTIAN MALARIA AMONG BRITISH TROOPS IN NORMANDY

BY

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Eight cases of primary B.T. malaria occurred in British soldiers serving in Normandy during August and early September, 1944. These soldiers had never previously served outside the United Kingdom, nor had they ever been in a malarious country. During the period subsequent to disembarkation they all, with one exception, admitted having been bitten many times by mosquitoes, and this man stated that the others sleeping under the same canopy complained bitterly of mosquito bites. In each of the following case records a short account of the onset of the symptoms is given, with a note of the variation of these to indicate the difficulty in reaching the correct diagnosis.

Case I

A young man aged 20, Category A1, attached to a paratroop battalion, was admitted to 77 General Hospital on Aug. 11, 1944, as a transfer from a small hospital, where a blood film had been examined on his admission there and B.T. rings and schizonts with some gametocytes had been found. He gave a very suggestive history of shivering and headache for four days previously. He had never before been out of England and had arrived in France on D Day.

On examination the spleen tip was palpable, but otherwise no other abnormality was found. A repeat blood film showed the presence of B.T. parasites. He was treated with quinine and pamaquin, and made an uninterrupted recovery.

Case II

A man aged 20, Category A1, arrived in France with an R.E. company on June 11, 1944. He was admitted direct from his unit on Aug. 20, diagnosed "infective hepatitis," with a history of pyrexia and headache of three days' duration. He had first reported sick on Aug. 17 and been treated in quarters with simple antipyretic measures until the 20th, when he was admitted to this hospital. His symptoms of headache and fever had begun during a short spell of heat. Several cases of the "effects of heat" had occurred.

On admission his temperature was 106° F. There was a faint tinge of yellow in his conjunctivae; the urine contained no bile, but there was a trace of albumin. Examination of a blood film taken the same evening showed no malaria parasites. A white cell and differential count revealed a leucopenia. Blood culture proved sterile. Examination of heart and lungs showed no abnormality, and the liver and spleen were not palpable. The pyrexia continued intermittently, but no bile appeared in the urine and there were no other positive findings until a repeat blood film late at night on Aug. 23, at the height of his fever, showed B.T. parasites. Quinine was given and the patient made a rapid recovery, with one rigor on the day following the first administration of quinine.

The spleen tip was first palpable on Aug. 23, but by the 25th it was easily felt to two fingerbreadths. The faint yellow tinge in his sclera disappeared; it was probably of haemolytic origin. This soldier had never served out of England before, and the diagnosis was obscured at first by the negative findings. It is noteworthy that at the height of the fever his pulse rate was slow.

Case III

This patient was a man aged 35, Category A1, who had arrived with his A.A. unit in France on D Day, having always previously lived in England. He was admitted on Aug. 25, 1944, as a transfer from another general hospital with the diagnosis "(i) ? malaria (never been in a malarious region); (ii) ? typhoid," and the following history: (1) malaise 3 days; (2) headache ++; (3) pain under left ribs; (4) generalized aching; (5) fever and sweats. He had been quite well until Aug. 22, and then was exposed to very wet conditions, when the above symptoms developed and progressed. He had had no vomiting, abdominal cramps, or diarrhoea, but had a harsh persistent cough with slight whitish expectoration. A blood film taken before admission had shown no malaria parasites.

On admission his temperature was 104° F.; his face was flushed and he was sweating. He was coughing violently, with little streaks of blood in the expectoration, and this was associated with occasional vomiting. The throat was reddened and the tonsil glands were slightly enlarged but not tender. On examination there were numerous rhonchi in the chest but no signs of consolidation. The spleen was ++ (four fingerbreadths) and acutely tender, otherwise there was nothing abnormal in the abdomen.

A repeat blood film taken on admission showed the presence of B.T. parasites. He was immediately treated with quinine, and by next morning his temperature was normal, and except for a slight rise to 99° F. on the 27th he had no further fever. The spleen gradually subsided, and each day became less and less tender; his cough rapidly improved, and by Sept. 10 it was no longer palpable and there was no tenderness in this area.

Case IV

A trooper of a Recce regiment who had arrived in France about Aug. 10, 1944, Category A1 and aged 19, was transferred to this hospital on Sept. 3 from another general hospital with a history of headache, general aches, and abdominal pain since Aug. 31. A blood film examined on Sept. 1 showed the presence of B.T. parasites—a few rings and amoeboid forms. Quinine 10 gr. (0.65 g.) and pamaquin 0.01 g. were started on that day, when his temperature registered 101° F.

Thereafter he passed through various medical units and arrived at this hospital. Blood films taken here were negative, but this was to be expected, as he had had quinine for two days previously. On admission his temperature was 98.4° F. and he was complaining of headache and pain in the back; there were no other symptoms. On examination no evidence of any other condition was found to account for his temperature, and his spleen was not palpable. He was given a full course of quinine and pamaquin, and except for some sweating has had no further symptoms or fever. He states that he had never before been out of England.

Case V

This patient was a gunner who had arrived in France on July 6, 1944, and had never been out of England before. He was admitted direct from his unit on Sept. 1, diagnosed "P.U.O.," with a history of three days' fever, and headache, abdominal pain, constipation, and general aches. He had been shivering each day though the weather was quite warm. On examination nothing organic was found in any system, but a thick blood film showed numerous B.T. rings and amoeboid forms. The spleen was not palpable. He was treated with quinine and pamaquin, and has made a good recovery.

Since his arrival in France he has been stationed in the same place, where he states there are many mosquitoes and he was frequently bitten by them. He was in a billet in which no other troops had been previously, and no others of his section had ever had malaria or been in a malarious country; he does not know whether this billet had been occupied by Germans or not.

Case VI

A driver in the R.A.S.C., aged 19, Category A1, had arrived in Normandy D+3 Day—i.e., June 9, 1944. He was admitted to this hospital on Sept. 6 direct from his unit, diagnosed "P.U.O.," complaining of slight headache, pain in the small of the back, and general malaise. His temperature was 103.4° F.; there was no obvious cause for the fever. He stated that he had had headaches, with tiredness and loss of appetite, for a week before admission, associated with a clammy sweat at times during this period. He had no previous history of any similar illness and had never before been out of England.

On examination he was pale, with a malar flush. He complained of headache, which was increased on flexing the neck, but there was no rigidity of the neck muscles. Kernig's sign was negative. The fauces were slightly infected, otherwise nothing abnormal was found in any of the systems and the spleen was not palpable. A white cell count on Sept. 7 showed: W.B.C., 7,400 per c.mm. (polymorphs 48%, lymphocytes 49%, monocytes 3%, eosinophils *nil*); but this slide for differential white cell counts revealed numerous B.T. rings and an occasional gametocyte. On Sept. 8 the spleen was palpable 1½ fingerbreadths below the costal margin. Further blood films confirmed the diagnosis with numerous B.T. rings and amoeboid forms and gametocytes.

Treatment with quinine was begun on Sept. 8 and the patient's temperature subsided. During his period in France he had slept under lorry canopies in various places, but for the past three or four weeks had been in one place near the coast, from which one other case of this series was admitted, though from a different unit. There were many mosquitoes, but he himself had no recollection of any mosquito-bites, though others under the same canopy complained of many. Several of the men of his unit have been in malarious countries, but he has no knowledge of their having had malaria. On Sept. 10 the spleen was only just palpable, but was not tender. The patient had a slight rise of temperature to 99° F. on that day, but there had been none since.

Case VII

A sapper aged 37, who had been in France since D+1 Day, was treated in this hospital from Sept. 1 to 12, 1944, on account of a very mild pyrexia lasting one day only and responding to rest in bed and an aspirin–phenacetin–caffeine mixture. Two days after his discharge from hospital he had a definite rigor, the sclera was faintly yellow, and he was readmitted, with a temperature of 103° F.; diagnosis, "infective jaundice." There was no bile in his urine, but a blood film showed numerous B.T. parasites (rings, amoeboid forms, rosettes, and gametocytes) and a degree of anisocytosis suggestive of a moderately long-standing condition, but obviously of a subclinical type. The spleen tip was palpable and the liver edge could also be felt and was tender. He had never been out of the United Kingdom previously, and only one other member of this unit had been in a malarious country; however, the slit-trench which he occupied with his friend—Case VIII—was within 50 yards of billets in a village previously occupied by the Germans. He stated that they had many mosquitoes in the slit-trench and were frequently bitten.

Case VIII

Another sapper of the same unit, who had always shared the same slit-trench as his friend Case VII, was admitted on Sept. 16. He, too, had never previously been out of the United Kingdom. He stated that he had been quite fit until Aug. 28, when he was admitted to an R.A.F. hospital suffering from fever. This quickly subsided with a simple diaphoretic mixture, and he was discharged to light duty on Sept. 5, but did not feel fit, and complained of tiredness in the legs until Sept. 15, when he again reported sick with fever, vomiting, abdominal pain with tenderness in the right hypochondrium, and a faint icterus of the conjunctivae. He, too, was admitted with the diagnosis of infective jaundice.

On examination there was a faint tinge of yellowness of the sclera, the spleen was just palpable and tender, and the liver edge was also palpable and tender. There were no signs in any of the other systems. The urine did not contain bile. A blood film showed B.T. malaria parasites. He has responded well to quinine and pamaquin.

Discussion

Although these are records of the rare occurrence of malaria in Normandy the local French doctors have no knowledge of any such occurrence in this region. A large number of the troops in the invasion force have had previous service in malarious countries, and it is officially reported that *A. maculipennis* is to be found in this locality. The infection of these mosquitoes may have been via that route or by the Germans who were stationed there before our arrival; for we know that prisoners taken have had earlier service in Africa. Temperature charts of the above cases mostly give a very typical picture of a malarial fever.

At the time of the admission of these patients many other cases of fever were being admitted with similar symptoms; these eventually developed symptoms leading to their correct diagnosis: e.g., (i) acute intestinal infections with fever—before the actual onset of the diarrhoea; (ii) infective hepatitis—with nausea but no other symptoms at first except fever; (iii) one case of lymphocytic meningitis, with headache and fever as the only symptoms; (iv) "effects of heat," with headache and fever only.

Although most of these patients were serving in units with troops who had seen service in malarious countries the infection did not arise until at least three weeks after they had left England, which is against its having occurred before embarkation. Many apparently primary attacks have been noted in other cases, but these had served in malarious countries previously and were therefore excluded from this record.

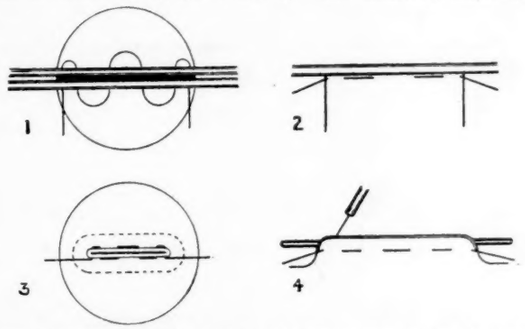
My thanks are due to Major J. V. Dacie, R.A.M.C., and Major J. C. K. Reid, R.A.M.C., for the pathology involved, and to Brig. E. Bulmer and Col. E. P. N. Creagh for permission to publish this article.

Medical Memoranda

A Method of Closed Anastomosis

The method to be described affords a simple means of performing anastomosis between any two hollow viscera under closed conditions. It requires no special appliances and is of very general application. It is equally applicable to end-to-end and to lateral anastomosis, and it can be used in situations difficult of access. It prevents gross soiling of the peritoneum at any stage of the operation, and the final result should be a secure aseptic junction.

The method consists in the introduction of a temporary guarding suture which maintains closure of the viscus until completion of the anastomosis, when it is removed. The simplest case is that of resection of a portion of the bowel followed by end-to-end union. Narrow crushing-clamps are placed across the bowel, which is divided between them by an endothermy needle or cautery. Close below the clamp on the portion to be retained a thick catgut suture is inserted, preferably with an eyeless needle, penetrating the bowel completely four or five times (Figs. 1 and 2). On removing the clamp,



closure is maintained by holding the suture taut, when the bowel wall may conveniently be slid along the suture to narrow the opening somewhat (Fig. 3). The bowel on the other side of the portion to be removed is treated in the same way, and the two butt-ends are then brought together and united by one or more layers of Lembert sutures. Finally the guarding sutures are cut short on one side and removed. A little manipulation ensures a free lumen, and a secure anastomosis results.

In the case of a lateral anastomosis, such as a gastro-enterostomy, a blunt-pointed rod is passed through each viscus deep to the site of the proposed opening, as suggested by Pannett, and a guarding suture is inserted beneath each rod (Fig. 4). The rod is now cut out by either a cautery knife or an endothermy needle, and closure is maintained as before by traction on the guarding suture. If, as is convenient, the two viscera have already been joined together by a posterior layer of Lembert sutures, all that is now required is the completion of an anterior layer and the withdrawal of the guarding sutures. A little manipulation ensures a free opening, and there appears to be no fear of haemorrhage from the cut margin, provided a cautery or endothermy has been used and the Lembert sutures take a firm grasp of the muscle coats. The only special appliance required is the rod, and for this a knitting-needle of steel for a cautery, or of plastic for endothermy, is satisfactory.

The simplicity and cleanness of gastro-enterostomy carried out by this method are remarkable. In relation to the large bowel it has an important application in the resection from the abdomen of carcinoma of the recto-sigmoid junction, or in favourable cases of the ampulla, followed by immediate end-to-end anastomosis, greatly simplifying this otherwise difficult operation, which may by this means be carried out with facility and security.

H. S. SOUTTAR, F.R.C.S.

Thyrotoxicosis in a Mongol

As I can find no recorded instance of thyrotoxicosis in a mongol, I think the following case worthy of publication.

CASE RECORD

A typical mongolian imbecile, aged 22, was admitted to Leavesden Hospital on Feb. 6, 1941. The patient's sister stated that she had noticed a swelling in the patient's neck early in 1939, and in December, 1940, observed that she tended to choke when swallowing solid food. The patient "always seemed on the warm side and

disliked sunshine." In July, 1939, her weight, which was normally 6 st. 11 lb. (43 kg.), fell to 5 st. (32 kg.).

I first saw the patient on June 6, 1941. She then complained of severe abdominal pain, which may be a feature of thyrotoxicosis, as described in Price's *Medicine*, 6th ed., p. 488. The eyes were prominent and staring. There was marked enlargement of the thyroid gland, especially the right lobe. The pulse rate was 100 a minute (she had a persistent tachycardia of 90–110 at this time). The B.P. was 118/60. The apex beat was felt in the fourth left interspace 3½ in. (8.9 cm.) from the midline. The rhythm was regular and the heart sounds normal. There was marked pulsation of the carotid arteries and a thrill and to-and-fro bruit, best marked where the lateral lobes of the thyroid glands crossed the carotid vessels and maximal on the right side. There was a fine tremor in the fingers. The skin was moist and warm. Her weight was then 6 st. 12 lb.

In July, 1941, she was transferred to the University College Hospital E.M.S. Wing at Leavesden, when Dr. Trotter estimated the B.M.R. Once it was raised by 47% and once by 54%. After 18 days on Lugol's iodine 10 m. (0.6 c.cm.) t.d.s. the B.M.R. fell to plus 30%. The sleeping pulse rate then averaged 70. In Sept., 1941, the blood cholesterol was 276 mg. per 100 c.cm. A sugar-tolerance curve gave a fasting level of 75 mg., rising to 280 mg. one hour after taking 50 g. of glucose and reaching 240 mg. at the second hour. Glycosuria was present during the test.

An electrocardiogram taken in Jan., 1945, showed a sinus tachycardia, rate 128 a minute, with pulsus alternans and wide ventricular extrasystoles suggestive of myocardial damage.

Re-examination of the patient on Oct. 7, 1945, revealed an increase in weight to 7 st. 12 lb. (50 kg.). The eyes were no longer prominent and staring, and the thyroid gland was much smaller, being just palpable. The pulse rate was 70 and the B.P. 124/80. The apex beat was in the fourth left interspace 3½ in. from the midline. There were frequent extrasystoles. The heart sounds were normal, with a pulmonary systolic murmur. The pulsation in the carotids had diminished, the thrill was no longer felt, and a faint to-and-fro bruit was audible on the right side only. The tremor in the fingers was less marked.

I am indebted to Dr. R. M. Stewart, medical superintendent, Leavesden Hospital, for his assistance and for permission to publish the case. I am also indebted to Dr. W. Trotter, University College Hospital, for the B.M.R. estimations.

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Obstructed Transmesenteric Hernia

Transmesenteric hernia is an uncommon cause of intestinal obstruction. A review by Cutler and Scott (1944) reported only 48 cases occurring in the literature. For this reason, and because the case throws some light on the aetiology, the following example of the condition is reported.

CASE HISTORY

A nursing sister of the Royal Naval Nursing Service, aged 27, was on night duty in a hospital ship with the British Pacific Fleet, when she was suddenly seized with an acute abdominal colic. This was soon followed by vomiting. I was asked to see her, and, apart from the fact that she certainly had a midgut-loop colic with vomiting, nothing abnormal was found on abdominal examination. I decided to observe her for an hour or two, but the condition became worse, the pain increased, vomiting became more marked, and she was clearly in great distress. Obstruction of unknown origin was diagnosed; the true nature of affairs was not appreciated pre-operatively.

Four hours after the onset of the pain the abdomen was opened by a right paramedian incision. There was some straw-coloured free fluid in the peritoneal cavity. The caecum was lax but the jejunal coils were distended. She was found to have a hole in the mesentery 3 ft. (90 cm.) from the ileo-caecal valve, with about 1 ft. (30 cm.) of ileum herniated through. The herniated gut was not strangulated, and was readily reduced. The margins of the opening in the mesentery were smooth and rounded, and the hole measured approximately 2 in. by 2 in. (5 by 5 cm.); this was closed with a continuous thread suture. The appendix was retrocaecal and therefore nowhere near the defect, and it showed no signs of past or present inflammation. It was removed.

Convalescence was marred by somewhat persistent vomiting and the excessively high atmospheric temperature, the ship being anchored within 120 miles of the Equator at the time; but after 14 pints (8 l.) of saline and glucose the patient's condition rapidly improved, and she was up on the sixth post-operative day. The wound healed soundly, and she has since remained symptom-free.

The case is of interest, first, in that it is apparently the 49th reported case of transmesenteric hernia causing obstruction; secondly, because it has been claimed that trauma and inflammation are aetiological factors. There was no history of trauma in this case, and no evidence of infection. The smooth rounded appearance of the hole indicated clearly a congenital origin.

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Reviews

FERTILITY IN MARRIAGE

Fertility in Women. By Samuel L. Siegler, M.D., F.A.C.S. With a foreword by Robert Latou Dickinson, M.D. (Pp. 442; illustrated. 35s.) London: Wm. Heinemann Medical Books, Ltd.

Fertility in Men. By Robert Sherman Hotchkiss, B.S., M.D. With a foreword by Nicholson J. Eastman, M.D. (Pp. 216; illustrated. 25s.) London: Wm. Heinemann Medical Books, Ltd.

In these days, when attention is again focused on the subject of fertility in general, and on the high incidence of sterile and relatively unfruitful marriages, the appearance of these books is timely. They are companion volumes, and, although each is an entity in itself, few will wish to read one without the other. Between them they present a very complete picture of what is at present known concerning male and female fertility and those factors which influence it, adversely or otherwise. They constitute one of the best surveys of the subject to be found in the English language, and, as such, they will be welcomed by all who are interested in the study and treatment of infertile marriage. In both books the outlook is wide and scientific, normal physiology is dealt with at some length, and fertility receives as much attention as infertility. The authors have managed to achieve considerable uniformity in a style and a method of presentation which are attractive. Their statements are cautious and by no means dogmatic. Each chapter is accompanied by an extensive bibliography, and there are few matters pertaining even remotely to the subject to which reference is not made. In matters of production these books are well up to the high standard which we have come to expect in those emanating from the United States of America, and the illustrations, some in colour, are not only plentiful but exceptionally good. The reproductions of radiographs call for special praise.

Dr. Siegler's work is the larger and more detailed of the two. More than 100 pages are devoted to the physiology of the female sex organs, and mainly to ovulation, its time of occurrence, determination, etc. The clinical approach to the female partner of an infertile marriage is well described, as are all the special tests and investigations, including even laboratory techniques such as the method for estimating pregnanediol in the urine. Every form of treatment, from vaginal douching to *x*-ray therapy to the pituitary gland and salpingostomy, is set out in full detail. The section on endocrine therapy of various kinds is particularly helpful. The value and limitations of this type of treatment and the important part played by the receptor tissues in determining their response to hormones are well stated.

The book by Dr. Hotchkiss is smaller and rather less satisfying. This is perhaps more a reflection on the limitations of present-day knowledge of male fertility than on the book and its author, who has himself been responsible for a good deal of original work on the subject. Again we find the same attention to detail in the description of the clinical side of the problem, and of the various investigations, including laboratory techniques, testicular biopsy, etc. Semen analysis and the significance of its results receive full consideration. It is made clear that the treatment of male infertility is not always so hopeless as is often imagined, but it is made equally clear that there are many gaps in our knowledge—particularly in regard to the causation, and therefore prevention, of such a high proportion of cases of impaired male fertility. It is a pity that the author has seen fit to omit impotence from consideration. Even though potency and fertility are separate issues, they are often closely related. Impotence sometimes plays a part in infertile marriages, and always presents a difficult problem to the clinician. It probably deserves a chapter to itself. Cryptorchidism and other anatomical faults also merit more attention.

Gone are the days when sterility and fertility in either man or woman were looked upon as absolute states, and it is now realized that very few individuals are fully fertile or sterile. All grades of fertility occur in both sexes, and low fertility in one partner of a marriage may be compensated by high fertility in the other. In any case of infertile marriage it is therefore unreasonable to consider the fertility of the man except in

relation to that of his mate, and vice versa; this is made abundantly clear by Dr. Siegler and Dr. Hotchkiss, which makes it all the more surprising that they should have decided to present their subject-matter in two volumes rather than one. The division has resulted in some overlapping and repetition, though every effort has been made to reduce this to a minimum. Moreover, it must have been difficult to apportion some of the material, and this has led to a few anomalies; thus all the characteristics of spermatozoa are dealt with under male fertility—with the exception of the behaviour of spermatozoa in the environment of the female genital tract, which is relegated to the other book. Under which of the two titles should artificial insemination be considered? We leave it to readers to guess how the authors answer this question.

A combination of these two books would not result in too cumbersome a volume—particularly if the chapter on ovulation was abbreviated to some extent and the chapter on abortion, which is the least satisfactory and is somewhat irrelevant, were omitted. In their place, however, we make a plea for the inclusion of a section on male impotence.

This criticism is deliberately constructive, because with some modification and elaboration these books might well become a standard work on the subject. Even as they are they will achieve a well-deserved popularity, and their intrinsic merit is such that they will easily survive these qualifications to our praise. It is to be hoped they will thrive on them.

PRE-SCHOOL CENTRES IN AUSTRALIA

Pre-School Centres in Australia. Building, Equipment and Programme. The Lady Gowrie Child Centres. By J. H. L. Cumpston, M.D., and Christine M. Heing, Ph.B., M.A. (Pp. 232. No price given.) Department of Health: Commonwealth of Australia.

This remarkable volume gives all possible information about the six Lady Gowrie Child Centres which have been set up in the State capitals of Australia. Profusely illustrated, it shows the children themselves in their various occupations from games and lessons to afternoon sleep. Apparatus and equipment are depicted, and architects' ground plans show how the different centres have been planned and built. Detailed schedules—reminiscent, in their completeness, of Army forms 1098—list everything which such buildings contain. At the same time descriptions are given of experimental work by the staff in the estimation of the intelligence and character of their under-five charges.

This is not a book to be read through, but as a mine of information for all those who are concerned with the public and even the private care of "the under-fives" it must prove invaluable. Everyone is impressed with the importance of the first half-decade of life in the formation of future character, and the care of this section of the population was one of the major problems of evacuation; it behoves us, therefore, in our future planning to be very sure what we want to do with these children if they cannot be in the best place—that is, in their own homes—and so this volume is particularly opportune, especially for officials of local authorities and everyone concerned with the placement of young children. All such should have it on their shelves for constant reference.

A FRENCH WORK ON PENICILLIN

La Pénicilline et ses Applications Cliniques. By René Martin, Bernard Sureau, F. Nitti, and Jean Berrod. Preface by Jacques Tréfouël. (Pp. 224; illustrated. 100 francs.) Paris: Les Éditions Médicales Flammarion.

It is perhaps not surprising that at least two books for the guidance of users of penicillin should have appeared in the U.S.A. before any on this subject has been forthcoming in the country of its origin. That France should furnish the next is more unexpected, for supplies of penicillin in that country were exceedingly scanty less than a year ago, and the experience gained since then cannot have overtaken that of British and American workers, who entered this field so much earlier. It is, therefore, much to the credit of four members of the staff of the Pasteur Institute and Hospital—R. Martin, F. Nitti, B. Sureau, and J. Berrod—that they have produced a book, *La Pénicilline et ses Applications Cliniques*, which should be a serviceable guide to the clinical use of penicillin, and ensure that the reader thoroughly understands the nature of the treatment he is giving. Although the text is based very largely on the work of foreign authors, it is embellished by numerous instructive case histories from the authors' own experience. The clinical section, which occupies much the greater part of the book, deals first with infections due to staphylococci, streptococci, and pneumococci, and then with meningitis, infections of the lung, gonorrhoea and syphilis, war wounds, oto-rhino-laryngology, and ophthalmology. Introductory chapters give an adequate account of theory and laboratory methods. There are many good illustrations and a bibliography of 662 references.

VECTORS OF SCRUB TYPHUS

Acari as Agents Transmitting Typhus in India, Australasia and the Far East. By Susan Finnegan, Ph.D., B.Sc. British Museum (Natural History) Economic Series No. 16. (Pp. 78. 1s. 6d.). 1945.

Scrub typhus was a major military problem during the war in South-East Asia and the South-West Pacific. Because few had anticipated this, and first-hand acquaintance with the disease was so rare, a great demand for information about it and its vectors arose. *Acari* by Dr. Susan Finnegan is intended to make readily accessible to those in the Tropics modern knowledge concerning the mites which are believed to carry the disease; it also summarizes information about ticks which carry other forms of rickettsial infection. The book gives a great deal of useful and otherwise inaccessible data.

Because of the military importance of scrub typhus, it was obviously wise to push ahead with the production of this book (even if it only appeared some months after the end of the Japanese war) although it was known that research then in progress was soon likely to make it obsolete in many details, and although security regulations deprived the author of the opportunity to include much material concerning control. With all this information now becoming available, it is to be hoped that before long a further edition will be produced. An unfortunate misprint on page 11 characterizes scrub typhus as giving a negative OXK Weil-Felix reaction.

Notes on Books

We have received from the United States Information Service (American Embassy, Grosvenor Square, London, W.) a reprint of the Lahey Clinic Number of the *Surgical Clinics of North America* published by W. B. Saunders in Philadelphia and London. This gives a full record of two symposia—one on gynaecological surgery, the other on thyroid surgery. The opening paper of each collection is by Dr. Frank H. Lahey.

A third edition of *Clinical Biochemistry*, by Prof. ABRAHAM CANTAROW, M.D., and Lieut.-Cmdr. MAX TRUMPER, Ph.D., has been published by W. B. Saunders Company (Philadelphia and London; 32s. 6d.). The book originally bore the title *Biochemistry in Internal Medicine*, but that was changed for the second edition, noticed in our issue of Jan. 6, 1940. Progress in biochemistry during the past five years has called for extensive supplementation and revision of the text, and a new chapter is included on hormone assay and endocrine function by Dr. A. E. Rakoff. The book remains a readable and informative guide to biochemistry as applied to medicine. It does credit to the Department of Physiological Chemistry and the Laboratories of Biochemistry at Jefferson Medical College and its associated hospital in Philadelphia.

Dr. B. N. GHOSH'S *Treatise on Hygiene and Public Health*, of which earlier editions have been noticed in this column, deals with the matter mainly from the point of view of practice in the Tropics. It first appeared in 1912, and the eleventh edition (Calcutta: Scientific Publishing Company; Rs. 12/8 or 21s.) is dated August, 1945. The good features of earlier issues are preserved, and the author has made a considerable number of changes in view of the experience accumulated mainly as a result of war conditions. There is a new chapter, on social medicine, written by Dr. J. B. Grant, Director of the All-India Institute of Hygiene and Public Health, and Dr. Ghosh has provided a new chapter on camp sanitation. This edition is sure of a welcome in India, and in this country it will find readers among those who are directly or indirectly concerned with the study of tropical hygiene.

The new edition of E. O. JORDAN and W. BURROWS'S *Textbook of Bacteriology* (W. B. Saunders; 35s.) is the fourteenth to appear since 1908—a reliable testimony to merit. Some of its features are the thoughtfully written introductory chapters, bacterial physiology and immunity being particularly well dealt with, the remarkably fine photographs of bacterial colonies, and the adequate space devoted to viruses and pathogenic fungi. Helminthology has also been included in the new edition: this is a questionable change, since by the standard set by the rest of the book this subject calls for a volume to itself.

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THE MINISTER LISTENS

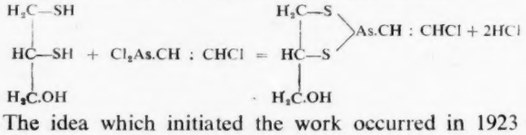
A correspondent recently observed that there seemed to be little doing on the medico-political front. Is this apparent inactivity because of apathy, or because of a spirit of defeatism in the face of a Government that can whip up a majority of 200 to enforce any legislative measure it wants? Doctors, it is true, share the general weariness of the spirit that descends on everyone in the immediate post-war phase, made less easy to resist in the present gloom of austere living on short commons in front of fires that burn very low. As a people we have missed the elation of victory—the short-lived compensation for years of endurance. As a profession which has had to negotiate with two wartime Ministers of Health, we are faced with a peacetime Minister who consults but does not negotiate or, in the ordinary sense of the word, discuss. To listen to what another man has to say is not discussion. Discussion, to quote a dictionary definition, is: "examination (of a matter) by arguments for and against." Democracy, someone has said, is discussion, and deprived of this stimulus the uncontrolled democrat feels deflated. The sparks that fly in free discussion of a controversial question often illuminate dark corners and bring to light matters that one side or the other would wish to conceal or have overlooked.

Mr. Bevan has not followed the example of his predecessor by publishing his proposals as a White Paper. He has, however, put them before various interested bodies, including the Negotiating Committee. The Committee has been precluded from circulating these to the medical profession. It has examined them and re-examined them in the light of previous decisions and of the principles drawn up by it. It has not been able to obtain the views of various professional groups, or of the profession at large, because the proposals are confidential. If they constitute the Bill the Minister of Health is to place before Parliament, then clearly he cannot make them public before Parliament has seen them. He may claim to know the views of the profession. He may even reflect that Ministers of Health have a habit of remaining in office barely long enough to make their mark on legislation. It may be that he is urged on by a Cabinet on which the *Observer* last Sunday made this criticism: "In its doctrinaire passion for nationalizing as much as possible as fast as possible, it was minding everybody's business but its own." But the fact remains that Mr. Bevan has refused to negotiate. He has received the Negotiating Committee and has listened to its comments on and criticism of his proposals. And he has withheld his response until it can be backed up by a majority in the House of Commons.

Mr. Bevan is acting within his rights as a Minister of the Crown. But he would not be acting outside them if he freely exchanged views across the table with a group of men chosen by the medical profession to represent it in negotiation. He has himself said that no health service can be run properly except with the whole-hearted co-operation of the doctors of this country. Co-operation means working together, and working together means, among other things, talking together. From this fruitful source of enlightenment we are at present debarred. This is not a promising start. Although the present phase of secrecy is highly disconcerting to those doctors who want to plan for their future—whether to enter practice or to leave it—nothing can be done to help them until the Bill is published. With the Bill in front of it the medical profession will have to decide what is to be its attitude to it as a whole, and will then have to examine its details. If the profession can agree on its attitude to the Bill, whether of disapproval or approval, and can preserve unity in action, then it need have no fears for the future. Legislators can legislate, but only doctors can provide the service.

THE SUBSTANCE CALLED "BAL"

Throughout the war much valuable work in discovering an antidote to arsenical vesicants was carried out in the Biochemistry Department at Oxford and the Chemical Defence Research Station of the Ministry of Supply at Porton. The veil of secrecy has now been lifted, and Peters, Stocken, and Thompson[1] have given an account of their work on the substance variously known for security reasons as "BAL" (British anti-lewisite) and OX217. The new substance is 2,3-dimercapto-propanol ($CH_2SH.CHSH.CH_2OH$). It is a penetrant oil, and in pure state is about 6% soluble in water. The reaction with lewisite is:



The idea which initiated the work occurred in 1923 to Walker,[2] who, following the discovery of glutathione by Hopkins, showed that arsenicals such as diphenyl-chlorarsine abolished the fixed —SH in muscle tissue and skin, thus interfering with glutathione catalysis. Similar work was done in the United States independently by Voegtlin and his colleagues,[3] who came to the conclusion that the toxic action of arsenic in living cells was due to its reaction with certain thiol compounds present in protoplasm. Further work confirmed the idea that arsenicals attack —SH groups, and in 1931 Cohen, King, and Strangeways[4] showed that thioarsenites of type $R.As(SR')_2$ were dissociable in alkaline solution. Peters[5] showed that dichlordiethyl sulphone, a vesicant, acted upon the enzyme system oxidizing lactate in the brain by poisoning the pyruvate component, as does the enzyme inhibitor iodoacetic acid, and, since this is also a weak vesicant, he thought the vesicant effect might be related to this action.

[1] *Nature*, 1945, **156**, 616.
[2] *Biochem. J.*, 1928, **22**, 292.
[3] *Publ. Hlth. Rep. Wash.*, 1923, **38**, 1911.
[4] *J. chem. Soc.*, 1931, 3043.
[5] *Nature*, 1936, **138**, 327.

Research in Oxford[6] has also shown that pathological changes in the brain in thiamin deficiency were due to partial failure of the "pyruvate oxidase" enzyme system, owing to deficiency of aneurin pyrophosphate. Dickens[7] and others[8 9] had shown that iodoacetate readily combined with —SH compounds. Thus the idea arose that the activity of arsenicals was due to an attack upon some essential SH component in the pyruvate enzyme system, and this formed the starting-point in the search for an antidote to lewisite.

During the war much work was done, but unfortunately it all had to be reported in secret documents to Government Departments, both here and in the United States and Canada. Peters, Stocken, and Thompson[1] soon confirmed the theory described above by showing that, *in vitro*, trivalent arsenicals produced a 50% inhibition of the activity of the pyruvate enzyme system, while, *in vivo*, poisoning with arsenite led to an elevation of the blood pyruvate level, similar to that occurring in vitamin B_1 deficiency. In spite of this no monothiol or dithiol compound would protect against lewisite or arsenite in either enzyme or animal tests; but Stocken and Thompson finally solved the problem when they found that, after treating aqueous solutions of kerateine (the reduced product of keratin) with lewisite, the arsenic content of the resulting lewisite–kerateine was correlated with the thiol content of parent protein and independent of the concentration of lewisite above a limiting value. This led them to the hypothesis that the high toxicity of trivalent arsenicals was due to their ability to combine with essential —SH groups to form stable arsenical rings, and caused them to investigate the therapeutic possibilities of the dithiols, in the hope that they would form more stable ring compounds than the tissue thiols.

After testing toluene dithiol and ethane dithiol BAL was discovered, and it proved highly effective in stopping the toxic action of lewisite upon the pyruvate oxidase system, and, further, it was found that besides being able to prevent the toxic action of lewisite it could reverse it. Animal experiments showed that guinea-pigs and rats seriously ill after two hours' contamination with lewisite could be saved, and on human volunteers at Porton it was found that vesication could be prevented as late as one hour after contamination, at a time when erythema and oedema were already present—in fact, these were less twenty-four hours after treatment than they were at the start. Further, both at Oxford and Porton and in the United States, experiments have shown that BAL will save a rabbit's eye up to twenty minutes after contamination. It was also noted that this treatment was followed by a marked increase in the excretion of arsenic in the urine. Repeated applications of BAL can induce sensitivity, and small amounts placed on the skin of men caused an erythema lasting up to two hours as well as lacrimation. Animals with renal damage showed no difference in their response to large doses, but those with hepatic damage showed toxic signs. In rats it was found to have a toxicity of 110 mg./kg. (LD50). Many similar substances were investigated, but all proved more toxic, with the exception of "BAL intrav," which was discovered by another British group, and on which so far no reports are available.

Chiesman[10] reported that, in factories manufacturing lewisite, pain after contamination of the eye is relieved by BAL ointment, and if it is applied within two minutes of the contamination a complete cure may be expected, though it causes marked blepharospasm. He stated that on the skin it will prevent vesication and systemic effects if applied within a few minutes, and will mitigate the severity up to one hour after contamination. In the United States it was found possible to develop a solution suitable for intramuscular injection; 10% benzyl benzoate in arachis oil was used as the vehicle. It thus became possible to treat complications of arsenical therapy such as dermatitis and encephalitis. Doses as high as 4 mg./kg. at four-hourly intervals may be given, and the results have proved much better than with any other treatment. The compound of mapharside with BAL is more dissociable than that with lewisite, and the presence of excess of BAL is needed for its stabilization; but increased arsenic excretion in the urine was also noted with mapharside. In various experimental animals with arsine poisoning Lovatt Evans[1] found some prophylactic and therapeutic action from BAL.

While BAL seems to be a complete antidote to arsenical war gases, it has no effect on mustard gas, and therefore has not rendered chemical warfare a thing of the past. However, it is also a great discovery in the treatment of arsenic-poisoning, and, since other metals form very stable and indissociable compounds with dithiols, it may prove an antidote in other metallic poisoning. The discovery also forms an important advance in theory. Pathological damage is brought about by the partial blocking or deficiency of an enzyme system, and, further, this pathological change is proved to be reversible.

[6] *Lancet*, 1936, **1**, 1161.
[7] *Biochem. J.*, 1933, **27**, 1141.
[8] Quastel, J. H., and Wheatley, A. H. M., ibid., 1932, **26**, 2169.
[9] Rapkine, *C. r. Soc. Biol.*, Paris, 1933, **112**, 790.

BUMBLEDOM IN ESSEX

"From now on, no patient from the county of Essex (other than a case admissible on the certificate of a relieving officer or a case in need of relief by reason of accident or sudden illness needing immediate admission to hospital) may be sent for admission to the Haymeads Hospital without my previous consent having been obtained in writing. You will, of course, have to decide in individual cases whether treatment is of such extreme urgency as to necessitate admission without my consent."

This is part of a circular letter from the county medical officer for Essex to general practitioners living near the Essex–Herts border who may want to send their patients to Haymeads Hospital, Bishops Stortford, which is in Hertfordshire. This hospital was upgraded during the war, and under the E.M.S. arrangements was used by patients in the "natural hospital area." The war over, local authorities are back at their old game of Tom Tiddler's ground, and the county medical officer, reluctantly no doubt, is called upon to help them to play this according to the old-established rules. Accompanying his letter to the practitioners concerned is an application form from the Public Health Department of the Essex County Council. On this the practitioner has to say that he has examined Mr., Mrs., or Miss . . . , and has to state the nature of

[10] *British Medical Journal*, 1944, **2**, 109.

the complaint. He then has humbly to ask the county medical officer for Essex to arrange for the admission of his patient to a hospital in Hertfordshire. So that the county medical officer of health may decide whether this is really necessary the practitioner is instructed to give brief notes of the case on the reverse side of the form of application. Naturally the C.M.O. does not ask to see the patient. Nor does it appear that he asks for notes so that these should accompany the patient when he goes to hospital. They are, it is presumed, to help him to arrive at his decision about the need for the admission to hospital of a patient he has not seen. This decision "in regard to each case will be notified to you in writing, and if I am in agreement I shall at the same time notify the hospital so that they can make the necessary arrangements for admission." This is what is called administration, and this is the kind of thing that makes the practising doctor shudder when he contemplates the administration of medical services through the unimaginative mechanism of local government. There is no mention in the county medical officer's letter of the medical superintendent of Haymeads Hospital. He at least, although his duties may be primarily administrative, should have a closer knowledge than the C.M.O. of the facilities that the hospital can offer and of its suitability for a patient whose admission is recommended by a local general practitioner. He probably also knows the local practitioner personally, whereas the county medical officer, tucked away in County Hall at Chelmsford, may be in complete ignorance of the persons concerned. It is not doubted that this inept way of handling what should be a simple matter is forced upon the county medical officer, and we hope that he will take the matter up with his authority, so that this modern example of Bumbledom may quickly be brought to an end.

BORNHOLM DISEASE

This epidemic disease, variously known as epidemic pleurodynia, epidemic myalgia, or "the devil's grip," is characterized by violent pain suddenly coming on in the lower part of the thorax and tending to spread to the abdomen. The disease was first described in Norway in 1872 by Daae, and two years later Finsen reported that there had been outbreaks in Iceland in 1856 and 1863. It attracted little attention until Sylvest[1] in 1930 recorded 93 cases between 5 months and 59 years of age, which occurred on the island of Bornholm in the Baltic. Since then many outbreaks have been reported, both in this country[2-4] and in the U.S.A.[5 6] The disease usually appears in warm weather. The onset is abrupt, with pain in the epigastrium and hypochondriac region which spreads into one side of the chest and is accentuated by breathing. In a recent outbreak Ronald[7] noted that, in addition to the abdominal muscles, there was particular involvement of the muscles around the shoulder girdle and neck. The affected muscles are tender and swollen, and the disease is accompanied by fever, usually up to 101° F. but sometimes higher; frontal headache is complained of in more than half the cases, and occasionally there are vomiting, diarrhoea, and epistaxis. Paraesthesiae in the arms and hands occur, especially in females. There are rarely any signs in the chest, and the spleen is not enlarged. One or more relapses take place in a quarter of the cases. The tenderness and swelling of the muscles and pain on exertion may last several weeks or months after the acute attack has subsided. Complications, such as dry pleurisy, orchitis, pericarditis, pneumonia, and otitis media, are on record, but mostly the disease follows a benign course and results in complete recovery. Nichamin[8] noted a steep reduction in haemoglobin level, and in his eight cases the red cells numbered less than 4 millions. White cell counts seem to vary widely, with no particular differential abnormality. The sedimentation rate is usually raised. The causal organism has not yet been identified, but an agent pathogenic to monkeys has been obtained from the blood, spinal fluid, and nasal washings of human cases of the disease.[9]

From June to November, 1944, 75 cases occurred in a war housing estate adjacent to a large shipbuilding yard on the Mobile River, at Mobile, Alabama.[8] There were 1,200 apartments reserved for the employees of the shipbuilding firm, and the workers were mostly white people from the rural areas of Alabama and Mississippi. That the spread of the disease is by intimate contact was confirmed by the characteristic distribution of cases in adjoining apartments and within the same household—a fact already stressed by Howard.[4] The infectivity was variable and not particularly high, but overcrowding in the community was undoubtedly a contributory cause. In 1944 there was an excessive amount of rainfall, with periods of continuously high humidity; warm, moist weather is probably a precipitating factor. Most of the patients were under 30 and 64% were females, but these facts were related to the distinctive nature of the industrial population on the island. The patient smitten with the disease, although reassured about his recovery, is unable to work for an indefinite time. Such disability, when multiplied in an industrial community like that described above, has an effect on industrial efficiency. It is necessary to assess the incapacity associated with an illness and also to appreciate the economic loss which it entails, and by these standards Bornholm disease is not to be neglected.

[1] *Epidemic Myalgia*, English translation, Oxford University Press, London, 1934.
[2] Pickles, W. N., *British Medical Journal*, 1933, **2**, 817.
[3] Smith, R. E., *Clin. J.*, 1937, **66**, 330.
[4] Howard, C. R. G., *British Medical Journal*, 1938, **2**, 1203.
[5] Harder, F. K., *Amer. J. med. Sci.*, 1936, **191**, 678.
[6] Howard, T., *et al.*, *J. Amer. med. Ass.*, 1943, **121**, 925.
[7] *J. roy. nav. med. Serv.*, 1942, **28**, 144.
[8] *J. Amer. med. Ass.*, 1945, **129**, 600.
[9] Ann. Rep. U.S. Publ. Hlth. Serv. for 1944, Washington, D.C.

TESTOSTERONE PROPHYLAXIS OF MAMMARY CANCER

A major outcome of cancer research in recent years has been the recognition that many tumour types are closely dependent upon specific hormonal changes for their inception and, in some cases at least, for their subsequent growth. These facts, and the substantial contribution already made by oestrogen therapy to the management of carcinoma of the prostate, have very naturally raised much interest in the question whether hormone antagonism, either direct or indirect, may be used as a practical measure of alleviation or control. This is especially so in carcinoma of the breast, mostly because of the well-defined part which oestrogens are known to play in the causation of mammary cancer in mice, but partly, too, on account of the presumptive connexion between some of the chronic mastopathies, which may involve an abnormal sensitivity to oestrogen, and cancer of the breast in man.

Although testosterone can certainly be regarded as showing a limited form of biological antagonism to the action of the female sex hormone in experimental carcinogenesis, too much should not be made of the point, nor can the matter be regarded as in any way simple. The experimental evidence is that such antagonism—measured by the capacity to prevent cancer of the breast in mice in which it can be determined by oestrogen action alone—is not readily made apparent, although it has in fact been

demonstrated by the use of dosages of testosterone which are sufficiently high and maintained for a long enough period. Although the production of breast cancer may be retarded by this means, there is little evidence that testosterone produces any significant effect on the growth of such tumours once they are established.

A recent contribution to the subject by Prudente[1] describes the use of testosterone as a post-operative measure for the prevention of recurrence in human breast cancer. Sixty-three cases which had originally been subjected to radical amputation were subsequently treated with testosterone propionate in dosages ranging from 25 to 175 mg. a week for prolonged periods: of these, 24 cases had been observed for more than three years at the time of the report, 12 for more than four years, and 4 more than five years. Virilization during treatment occurred in 10, being severe in 5 and moderate in 3. A control group was provided by 64 comparable cases in which the breast had been removed by the same technique of radical surgery in an earlier period of seven years, but in which testosterone was not employed. All cases were confirmed microscopically, and classified first by a system based on both clinical and pathological criteria, and secondly in histological grades of malignancy: no case showed more distant spread than to the axillary nodes.

Apart from a good deal of speculation which has little direct bearing and can in no way affect the outcome of the experiment, the essential results are presented in a series of tables. Even if it be conceded that the data are consistent with the truth of Prudente's claim—that treatment with testosterone has produced a survival rate without recurrence twice as great as in the control series—closer study raises considerable doubt whether such is not in fact only one of a number of equally likely explanations. This is not to say that the investigation does not represent a substantial contribution of effort and no doubt careful observation, and the author himself is well aware that the series are not large and that other objections might be raised. But under the conditions of this present study it is probably wise not to accept the data as constituting evidence sufficient to support a thesis which is far too important to be lightly accepted or lightly dismissed. Only the growth of experience on a larger scale and over a longer time, and under more adequately controlled conditions, can provide a conclusive answer.

[1] *Surg. Gynec. Obstet.*, 1945, **80**, 575.

RORSCHACH TEST AFTER HEAD INJURY

The Rorschach ink-blot test occupies a unique position among psychological tests in that it can be, and is, used to test more than one function of the kind. From it the skilled interpreter can obtain indications of his subject's intelligence, power of imagination, and capacity for synthesis, and also of such emotional qualities as tendencies to hypochondriasis or depression, or schizophrenic traits. This great flexibility has to be paid for by an element of subjectivity and ambiguity, and the results of the test cannot be expressed very satisfactorily in a metrical form. It is therefore all the more interesting to see the test used, as it has been by Zangwill,[2] to explore the disturbances of function that occur after severe head injury. Two young men, both of good intelligence and normal personality, suffered from closed contusional injuries mainly incident on the frontal region, and were unconscious for three and for five days. They subsequently went into confusional states, without notable focal signs, which slowly cleared. They were given the Rorschach test during the height of the confusion, during the following Korsakow phase, and finally when improvement was complete and stationary. These stages were accompanied by big changes in Rorschach response. At the height of the confusion the cards were responded to as wholes and in some single aspect—e.g., that of colour. There was great limitation of response, indicating a generalized limitation of cognitive activity. The bizarrerie of the responses might be in part attributable to paraphasia, but in part also to a more general disturbance of thought and affect. In the Korsakow phase paraphasic and peculiar responses had abated, and there was now seen a tendency to project into the designs reflections of dominant emotional preoccupations—in the one case conflict and aggression, in the other injury and mutilation. Zangwill believes that at this point the test can provide indications of the eventual direction of post-traumatic personality change.

[2] *J. ment. Sci.*, 1945, **91**, 322.

PLANNING HOURS OF WORK IN AUSTRALIA

The hours of work problem during wartime troubled Australia as it did this country, and in October, 1942, the Governor-General, acting under the National Service Act of 1939–40, issued a series of regulations dealing with the subject. They have now been republished in a pamphlet entitled *Planning Hours of Work*,[1] which describes their practical application in some detail. The first part explains the effects of too long hours in reducing production, and indicates the best weekly hours for a sustained maximum output. The 48-hour week is taken as a standard, which may be increased to 56 hours for men and 52 hours for women, if engaged on light physical work. For men employed on heavy physical work they were diminished to 44–46 hours, but in emergencies the hours mentioned might be exceeded for short periods. Young persons under 18 years of age were specially protected, and it was recommended that they should not be asked to work regularly for more than 44 hours a week. If these regulations were strictly acted upon, they formed a more rigid and enlightened scheme than the irregular arrangements frequently followed in this country.

The latter half of the pamphlet gives detailed advice on the various ways in which the working hours may be most conveniently split up. Great stress is laid on the importance of allowing at least one day free from work every week, and a number of tables are given suggesting the best working periods to be adopted for a two-shift or three-shift system. The disadvantages of night work for women are emphasized, and it is stated that managers who had adopted it generally replaced it by two day shifts as soon as they could. Ten-minute rest pauses, for tea, are recommended during all work spells. In a number of factories annual leave for a week, on a roster system, was found to have a good effect in keeping up production. The Industrial Welfare Division of the Department of Labour and National Service of Australia, which has already issued a number of manuals, bulletins, and leaflets dealing with industry, is to be congratulated on its latest addition.

[1] Bulletin No. 4 of Industrial Division of Department of Labour and National Service, Australia. Nicholas Building, 37, Swanston Street, Melbourne.

The House of Delegates of the American Medical Association has awarded the Distinguished Service Medal to Dr. George R. Minot for his great contribution to our knowledge of the causes of pernicious anaemia and the methods of controlling it.

A GENERAL SURGEON AT SEA

A REVIEW OF 700 CASES TREATED IN THE DOWNS

BY

JAMES S. HALL, M.B.Lond., F.R.C.S.Ed.

Surgeon, E.M.S., Deal

This is a story of an attempt to render urgent medical assistance to ships of all nations in the roads off Deal during the six years of war. I hope that a brief survey of the diversity of cases and the unusual setting may prove of some general interest and perhaps help my successor in the next world war, should he have to undertake the difficult task of dovetailing his general practice with emergency calls to sea.

The Downs have been a famous anchorage throughout our history, and comprise 50 sq. miles (130 sq. km.) of sea between the shingle beaches of Deal and Walmer and the Goodwin Sands. Julius Caesar is said to have anchored here for the first invasion of Britain, and in Nelson's day they frequently contained the entire British Fleet. During this war, when a carefully sown minefield blocked the outer reaches of the North Sea, the entire shipping traffic through the Channel was forced to pass through or anchor inside the Sands, which lie some five miles (8 km.) from the shore. A deep-water channel between these and the five-fathom (9 m.) bank two miles (3.2 km.) from the beach affords sufficient space and safety for several hundred vessels in almost any weather.

In Sept., 1939, a Naval Contraband Control closed both ends of the anchorage with guardships and subjected all vessels to rigorous search and detention, sometimes for many weeks. No communication between vessels themselves or the shore was permitted and all wireless transmitters were sealed. Contact was maintained by examination tugs and urgent need indicated by the hoisting of simple flag signals in the international code. In dense fog these were replaced by equivalent letters in Morse on the ship's siren. Under the general administration of the Dover Command the control work fell to the naval base at Ramsgate. It soon became evident that provisions, fuel, and urgent medical aid would have to be supplied from shore, and a fortnight after the outbreak of war I was asked to undertake the work of visiting surgeon. The local fishermen provided a rota of small motor-boats, and when weather conditions were such that no other vessels could be launched we were empowered to call out the Walmer lifeboat. At first the hardships of work at sea were overshadowed by the discomforts of strict naval discipline. An armed guard attended all visits to ships, and before visiting and after leaving each ship the small boats had to report to the guardship on duty. This wasted hours of useful time, as no boat had a speed of more than six knots and frequently had to travel several miles against a four-knot tide. Eventually I managed to obtain a free hand and, flying a Geneva flag as a protection from warning rounds from the guardships, we had free access to the ships and shore, with a general permission to take any necessary action to save life provided that our movements were immediately reported to H.M. Coastguard and later, in writing, to the naval officer in charge.

The work done covers two distinct periods. Up to June, 1940, we dealt with 298 cases in 130 ships, and then, with the fall of France and the installation of heavy cross-channel guns, anchorage became impossible, and even the small examination tug was driven back to her base by salvos of 16-inch shells and constant air attacks. Such convoys as were essential came through at high speed with balloon protection and a smoke screen, or perhaps under cover of the heavy morning mist. With the fall of Calais in Oct., 1944, a Control was re-established, and my work began again. During the next twelve months a further series of 404 patients were attended in 153 ships.

The incidence of nationality is interesting, as it gives a cross-section of the merchant navies serving our ports at the beginning and the end of the war. British ships, of course, form a high proportion at both times, although in a joint total American vessels hold the lead. In the first year the American flag was an unusual sight from the shore, and I visited only two of their ships, seeing three patients in all. The latter half of the work produced 88, mostly Liberty ships, with 209 patients. During the early years the Downs became a kaleidoscope of European flags, with the tricolour Dutch and the blue-and-white Greek

TABLE I.—*Nationality of Ships and Patients*

Nationality	1939–40		1944–5		Total Ships	Total Cases
	Ships	Cases	Ships	Cases		
American	2	3	88	209	90	212
British	32	141	52	94	84	235
Dutch	38	46	8	94	46	140
Greek	11	35	—	—	11	35
Norwegian	7	7	4	4	11	11
Italian	9	18	—	—	9	18
Belgian	7	19	1	2	8	21
French	4	14	—	—	4	14
Finnish	3	4	—	—	3	4
Swedish	2	2	—	—	2	2
Portuguese	1	1	—	1*	1	2
Yugoslav	1	1	—	—	1	1
Panama Republic ..	1	2	—	—	1	2
Estonian	1	—†	—	—	1	—
Eire	1	5	—	—	1	5
Totals ..	130	298	153	404	283	702

* Portuguese patient in American ship. † British Indian in Estonian ship.

forming the majority, and these two nations provided a large number of my urgent calls. At this time all neutral vessels had their national colours painted on their sides—a great help in our search for ships often crowded together or many miles apart. On occasion, however, when we had to find a case of attempted murder in an Estonian ship or treat two citizens from the Republic of Panama, we discovered that nobody in the boat had any idea of what the flags looked like. Language is a considerable problem, but usually the master speaks good English and somebody among the crew can be found to act as an interpreter. The main trouble arises on shore when operation cases are admitted to hospital and one finds a row of half a dozen patients all speaking different languages and no English. I always wondered how the nursing staff overcame this difficulty. In general, a smattering of French, German, and Italian is of considerable help; but there are many pitfalls, as I found when I took a nurse over a dark and stormy sea to give an enema to a Portuguese with acute constipation. It was not till next day that we found that *não bom* does not refer to a part of the anatomy, and *a constipação* means a severe cold in the head. But I still treasure a letter of grateful thanks from the owners for our successful treatment of the case. One interesting psychological fact shown by the tables is that while the northern European nations are too healthy or too proud to ask for treatment or advice for extra members of their crews, the remainder endeavour to obtain good value for their money by asking a visiting doctor to see every sick man on the ship. When a ship has just been mined or torpedoed and is in danger of breaking up it is curious how many of her company require urgent medical treatment ashore, and on Greek ships I have known a patient to produce and finger a long evil-looking knife when his symptoms were thought insufficient. On such occasions the discreet doctor will avoid the darker alley-ways when leaving the ship. Most of these cases occurred in the earlier part of the war when mines and enemy action were rife. Pure neurosis was rare, but I was once called to a ship to prevent two men being lynched by their fellows for spreading depression and alarm. There was none of this sort of thing in the second period.

At first the routine method of obtaining medical assistance was the hoisting of a "W" flag on the foremast or triatic stay. This flag, made up of concentric blue, white, and red squares, indicates urgent need of a doctor without specifying the cause. It proved a great help in finding the right ship, but one requires considerable foresight in packing a bag against any possible contingency. Distance and rough seas not infrequently make it impracticable to return ashore for missing kit. We were always able to launch from a shingle beach, but with a heavy swell it is sometimes necessary to lie off shore for an hour or more before a safe landing can be made. In fog the "W" signal is sounded in Morse on the ship's hooter (· — —) for several minutes. Then one spends several hours trying to find where the hoot had come from. The worst type of call is a verbal message or radio signal giving the name of the vessel without any indication of position. In the later stages of the war all ships took to grey or black paint and the names appeared only on small removable wooden boards on the bridge, illegible a quarter of a mile away. Sometimes an Atlantic convoy would come in bearing none. In such a case

only a ship-to-ship call will yield results, but it may entail covering a zigzag course of twenty miles (32 km.) or more. We always found the ship in the end, if it was in the anchorage at all; but once it took over ten hours from 3 p.m. till 1.30 a.m. —when we found the vessel completely blacked out off Broadstairs. On average, our journeys lasted about three hours.

The list in Table II includes all cases seen on board in addition to the urgent condition initiating the message. Just under 300 patients were treated in the first period and just over 400 in the second. The large preponderance of injuries in 1939–40 is

TABLE II.—*List of Cases (Sept., 1939, to Oct., 1945)*

Condition Found	1939–40	1944–5	Total
Appendicitis	7	8	15
B.I.D. (found dead)	5	—	5
Bronchitis	3	10	13
Burns	6	6	12
Cholangitis	5	8	13
Dental cases	2	19	21
Enteritis	10	13	23
Epilepsy	1	—	1
Epistaxis	1	1	2
F.B. in eye	4	6	10
Fractures	8	11	19
Gastric ulcer	2	1	3
Gastritis	6	11	17
Heart disease	5	6	11
Hernia	1	5	6
Hydrocele	—	4	4
Immersion	2	6	8
Infectious diseases	4	11	15
Influenza	24	2	26
Injuries	125	38	163
Inoculations	—	92	92
Neurosis	16	6	22
Obstruction	—	3	3
Pneumonia	2	4	6
Pulmonary tuberculosis	1	6	7
Renal colic	6	5	11
Rheumatism	12	16	28
Septic conditions	9	17	26
Sinusitis	3	12	15
Skin diseases	6	20	26
Tonsillitis	4	20	24
Venereal diseases	16	31	47
Totals	298	404	702

chiefly due to enemy action during the evacuation from Dunkirk, which provided us with nearly continuous work, day and night, for the last fortnight in May, 1940. The large number of inoculations in the second period came from two Dutch steamers whose entire crew required typhus, cholera, and T.A.B. vaccine on board at short notice. Venereal disease is high in the scale and, bearing in mind that mostly atypical cases occurred in the list, is in actual fact even higher. Most American ships carry penicillin and all have sulphathiazole, with a purser well instructed in their use. I once found one sportsman having gonorrhoea for the eighth time, but he was only produced as a curiosity. These pursers are given several months' intensive medical instruction, and after examination are awarded the diploma of a Pharmacist's Mate. Their diagnostic ability is high; several I met were advanced medical students, and it was a rare thing to find that any incorrect treatment was given. About two-thirds of the V.D. cases were diplococcal or resistant streptococcal urethritis, and one-third syphilis or chancre patients. A favourite method of giving penicillin was in 10,000-unit doses every three hours for thirty hours. Under this scheme, of course, neither the purser nor his patient got any sleep, and this probably accounted for the unpopularity of the patient above when he remarked that he was nearly ready for his ninth. The general efficiency in diagnosis and treatment is just as evident in all cases at sea, and is in distinct contrast with similar cases on land. Only once did I find burns treated with oil, and then by the patient himself. All the appendix cases were well starved, with purgatives withheld, except one returning from West Africa. A complete list of his diet included melons, pomegranates, and lemons, and was followed by the laconic note, "Patient was then sick." Rheumatoid arthritis is an extremely rare complaint at sea, as is also gastro-duodenal ulcer. Most of the cases listed as rheumatism were transient fibrositis. Skin disease, rare in the first period, was fairly common in the second, the majority of men complaining of tinea or scabies. The use of benzyl benzoate preparations is not yet widely known, although most medicine chests contain a bottle. It may be, of course, that European crews tolerate a good deal of skin irritation without complaint, while it is generally resented by the Americans. The great increase in sinusitis and tonsillitis seen in 1944–5 is due to the high incidence of American patients, who had four times the amount of ear-nose-and-throat trouble seen in a comparable number of Europeans.

I note without comment that the average American ship maintains its living quarters about 10° higher than those of other nations, a temperature of 70° F. being not unusual. It was not uncommon, when boarding Liberty ships in a snowstorm, to meet members of the crew walking about the passages amidships almost naked, while the average patient in his bunk had only a pair of drawers and a single sheet. Enteritis and cholangitis—all these terms are to be taken in their widest sense—are common throughout, and occurred mostly in small vessels and British ships, which had few refrigerators. In the last few months of the war we found a few mild outbreaks of Sonne dysentery, and it is quite possible that several cases of paratyphoid were overlooked. Dental cases are frequent in American ships, and it pays, when answering a call to a case of suspected mumps, to carry a few dental forceps in the pocket. In the early days I brought cases ashore to a dental friend, but later an acute shortage of these useful gentlemen made it necessary to do extractions myself, and I found that most teeth can be removed with a straight incisor forceps, while a whiff of chloroform makes the job more comfortable for everybody concerned. It also proved satisfactory for minor operation cases where local analgesia was impracticable. Most of these are better done ashore if weather conditions permit the transfer of the patient to a small boat. If not, the operator is advised to sit astride the patient and move with him; this produces relative stability. In all, I did 29 operations on board, all minor cases. Before starting, it is as well to see that mine-sweepers are not working in the vicinity, especially if you are removing cysts or foreign bodies from the eye or lids. A magnetic mine exploding a hundred yards away will throw a patient out of his bunk. One unlucky Finn I attended with a renal calculus had eleven such mines round his ship, but still refused to come ashore. This condition is always diagnosed accurately on board ship, and in no case could I disprove it by *x*-ray examination ashore. Once, indeed, the captain of a Dutch tramp had explained the probable operation so well in High Dutch to his chief engineer that I was able to land him and perform a nephrolithotomy without delay or argument.

Table III shows the suspected emergencies on board 262 ships, and is derived from the actual messages received or the opinion stated by the ship's officer in charge of the patient—on American ships the purser, on the rest the master, the mate,

TABLE III.—*List of Suspected Emergencies (262 Calls)*

Ship's Diagnosis	1939–40	1944–5	Total
Injuries	19	19	38
Appendicitis	19	12	31
Venereal disease	12	15	27
Septic conditions	7	13	20
Fractures	11	8	19
Infectious diseases	4	11	15
Dental cases	1	8	9
Neuroses	8	—	8
Heart disease	6	2	8
Renal colic	4	4	8
F.B. in eye	4	3	7
Bronchitis	2	5	7
Dislocations	5	2	7
Tonsillitis	1	5	6
Pneumonia	2	4	6
B.I.D. (landed dead)	5	—	5
Gastro-enteritis	2	2	4
Sinusitis	1	3	4
Haemorrhage	2	1	3
Intestinal obstruction	1	2	3
Burns	1	2	3
Gastric ulcer	2	1	3
Rheumatism	2	1	3
Immersion	1	2	3
Inoculations	—	2	2
Strangulated hernia	1	—	1
Totals	126	136	262

or the steward. A careful perusal of these will almost answer the question, "What should the doctor put in the little black bag?" I was lucky enough to have three large gladstone bags with linings fitted for instruments, and these just lasted out the war. Sea-water, and the battering against ships' sides as the

bag is pulled up with a heaving-line, demand good leather and careful packing. A set of surgical instruments and suture material are essential, and are best contained in a stout spirit-proof case. Water on a ship is never sterile, and it saves time to arrive with everything already aseptic. Soft-tissue injuries formed the highest quota of urgent calls—nearly 15% of the total. With fractures, dislocations, and burns added, one is likely to find some form of trauma in more than 25% of cases.

Suspected appendicitis is the largest bogy facing the unqualified ship doctor. Out of 31 such patients I found 15 genuine cases, operated on 8, resolved 2 with penicillin—one a boy of 17 who had perforated in mid-Atlantic six days before, and came ashore almost moribund with peritonitis and paralytic ileus; the other a Chinese who refused operation after his appendix perforated during his journey in, with temporary relief of pain. ("No makee cut; me velly better.") We had to use our last 100,000 units on him. The others settled down with medical treatment and left hospital promising to undergo interval appendicectomy elsewhere. The 16 other cases had either acute abdominal pain from gall-stone, or intestinal colic, acute enteritis, or some form of right-sided discomfort. These include an inguinal bubo, saphenous phlebitis, two hernias, several cases of acute orchitis, and a hydrocele. Two pleurisies and a fibrositis made up the medical contribution. Another great bogy is suspected infectious disease. I have listed only genuine cases, which include all the common exanthemata. We were extremely lucky to avoid smallpox, cholera, and typhus. All were left on board in isolation, and it is prudent to take anti-scarlet-fever and anti-diphtheria sera in the bag so that no reproach can lie on this score when one advises that the patient should remain in his bunk. In at least as many cases again, suspicion of infection may have been a serious factor. One Dutch captain thought he had acute phthisis when he developed pain and haemoptysis, but examination showed intercostal shingles, which cleared up rapidly with aneurin injections and radiant heat. In his case the infection appeared to have come from two pots of raspberry jam sent to him by an old lady in Holland who regretted that she had had to curtail her usual half-dozen owing to shingles. At any rate, he and his crew had been away from any kind of contact with shore for over six weeks.

Venereal disease is a problem, and forms 10% of emergencies. Most ships carry sulphathiazole and treat gonorrhoea with a course of 50 to 60 g. (1 g. 4-hourly). This clears up most of the cases, but does not improve the frequent non-specific posterior urethritis, which hangs on for weeks. I put these people on large doses of hexamine and advised them to seek out a genito-urinary surgeon in the next port. Soft chancre and various stages of treated and untreated syphilis were only too common. It proved useful to carry a bismuth suspension and a first-and-last dose of N.A.B., as in most cases it was essential to provide adequate interim treatment till the ship reached port, probably in less than a week. Only American vessels carry penicillin, which simplifies treatment; and in these my opinion was chiefly sought about the risk of infection. At least three cases occurred among ships' cooks, and many among the armed guard, who live in rather close personal contact.

Ischio-rectal abscesses were common among the septic conditions, and a nice judgment is required as to whether to risk incision on board. In all cases I found them ripe underneath, and earned a good deal of temporary gratitude. Most of the remainder were pointing somewhere or other by the time we were called, and I had the impression that the general resistance to infection was much higher among seamen than in my patients on shore.

I think that all the heart cases treated on board occurred in elderly ships' captains, and all appeared to be due to gross overstrain and lack of sleep. The last was that of a pilot who collapsed on the bridge after giving a compass bearing which would have piled the ship up on the Goodwins. Fortunately the skipper, standing by, saw the breakers ahead and reversed the order. This unfortunate man had had no sleep for four days and no holiday for a year.

Foreign bodies in the eye seem much more common than the statistics show, and a little 5% cocaine and an eye spud more than earn their keep. I found a tube of merthiolate and metycain a useful remedy for most ophthalmic cases. It is probably too dangerous to leave atropine with no supervision for several days.

Five bodies were brought ashore. Although the ships concerned were more than three miles (4.8 km.) from the beach, inquests took place on two cases of accidental death and a suicide—that of a Belgian who hanged himself. When one has knowledge of these fatalities—as when a British ship hoisted the three-flag signal "E.N.L." (Death)—it saves a lot of time to invite the coroner's officer to take a sea trip. If he doesn't like boating there is certain to be a deputy who does.

Serious cases needing treatment ashore were all brought in by small boat and a deep wire stretcher with blankets; a pillow is always put in unless we know that it will not be required. After trying out almost every method I believe the safest way to get a stretcher case from a ship into a small boat is to lower it down the side with four separate ropes and a man holding each, with a boatswain in general charge so that when the receiving party in the boat have a firm hold the ropes are dropped completely slack. A good alternative is the same system with four cleats and a derrick slung well out, or a boatswain's chair for a sitting case. We landed 146 cases, and I do not think any were the worse for the journey, though sometimes our little boats were half full of snow.

In all, 114 cases were admitted to the Victoria Hospital, Deal, and I cannot too highly evaluate the devoted nursing these received and the remarkable way in which the sisters in charge overcame the language difficulties. Apart from four moribund patients who died from heart failure within 48 hours of landing, we had only one fatality in the first series. This was one of five cooks in the R.M.S. *Dunbar Castle*, one of the first ships to be sunk by a magnetic mine in the Thames Estuary. These unfortunate men were frying fish on a form of primus stove in the depths of the liner when her bottom was blown out. All five had third-degree burns of the face, hands, and arms from the boiling fat and burning Diesel oil when the mine exploded. All made a good recovery except one man whose face and both eyes were completely destroyed. He developed a rapidly fatal septic meningitis on the third day.

There were no fatal cases in the second period, and all the patients left hospital in a satisfactory condition after treatment. In several cases of appendicectomy and a strangulated hernia we were able to send the patients back to the ships on their return to the anchorage ten days later, much to the satisfaction of everybody concerned. As all this immigration was entirely unorthodox I was personally responsible for all patients brought ashore till they had been vetted by the Security Police from Folkestone or Dover. To avoid difficulties I admitted all cases to my own beds and, so far as was possible, dealt with them myself. I have to thank my partner, Dr. C. B. Hutchison, who gave all the anaesthetics, and Dr. C. P. F. Boulden for their unstinting help with the medical cases and pathology; and all my colleagues for their assistance and support. Dr. D. W. Kirk, M.O.H. for Deal, arranged accommodation for shipwrecked personnel and put his civil defence organization at our disposal for casualties. The St. John Ambulance Brigade drivers turned out at all hours in response to my light signals from ships, and the ambulance was always waiting when we grounded on the beach.

Throughout the entire war the work was made possible only by the unfailing help and courtesy received from the naval authorities at Dover and Ramsgate and the untiring co-operation of H.M. Coastguard at Deal. I have an eternal respect for the Deal boatmen who took me out in all weather conditions, often risking their boats and their lives to get me safely aboard; and especially for Messrs. J. Mercer and F. Upton, coxswains of the Walmer lifeboat, who took me out seventeen times when no other vessel could be launched. The Royal National Lifeboat Institution has given me every help, and I have a special word of thanks for a personal permission to use their electric capstan. But not for their rum ration, carried on all lifeboats, which in all the six years of war I have not yet been able to broach.

Summary

An account of an emergency casualty service to shipping off the south-east coast is given, with some description of the organization found necessary and three tables showing the incidence of diseases and nationality. In all, 702 cases were dealt with—556 on board

ship and 146 landed for treatment ashore. War injuries and suspected appendicitis formed the largest groups among the urgent calls. The mortality rate was surprisingly low in view of the primitive methods necessarily adopted. Five patients died—four of them already moribund heart cases, and the fifth of severe burns destroying his face. The remainder, so far as we can trace their histories, made good recovery. This account should not be confused with the Air-Sea Rescue Service, which, based on Dover, did such magnificent and heroic work in these waters throughout the war. The risk accepted by these gallant men to save their pilots and aircraft crews was of a far greater order than anything encountered by us.

THE LORD PRESIDENT ON MEDICAL RESEARCH

Mr. Herbert Morrison, Lord President of the Council, in a speech at the annual luncheon of the Parliamentary and Scientific Committee, said that the present Government was fully alive to the importance and responsibilities of science in every field of national endeavour. The Cinderella days of science were gone. To-day there was a place for scientists side by side with civil servants, workers and managers in industry, farmers, professional men, and technologists of all kinds in the great work of national recovery and social planning upon which the country was embarked. A good administration brought to its problems advisers from every section of the community. There had been in the past too much repression of scientific freedom to mix, and to publish, both by Government and by industry. So far as the present Government was concerned he hoped to see wide freedom in this respect, with the exception, of course, of certain work which all agreed must still remain on the secret list. Speaking particularly on the subject of medical research Mr. Morrison said:

"The principal present trend in the development of greater opportunities for medical research is the expansion of the system of research units. Each research unit consists of a small group of investigators appointed to the Medical Research Council's scientific staff and working under a specially chosen director. Each has the task of exploiting a particular field of research and is located by arrangement in some suitable institution, which may be a hospital, a university department, or an independent institute. The system is economical in that most of the expenditure is on staff, and it is elastic because there is no permanent commitment in the form of buildings. It also increases the opportunity of collaboration between members of the Medical Research Council's staff and research workers in other employ throughout the country. One unit formed since the end of the war is attacking the problem of pneumoconiosis in the South Wales coalfield.

"The research programme of the Medical Research Council is not concerned solely with problems of disease, but extends also to questions of normal health and efficiency, of mind as well as of body. During the war the Council greatly developed this type of work in investigations undertaken for the Services on the problems of physiology and psychology involved in the design and use of aircraft, submarines, fighting vehicles, and various types of weapons. Many of the lessons learned will find application in an intensified programme of research into similar problems in peacetime industry.

"An important fresh task lies before the Council in research into the medical and biological applications of recently acquired knowledge in the field of atomic physics. On the one hand, there are new possibilities to be explored in the radiation treatment of malignant disease and other conditions; on the other hand, the availability of tracer elements (isotopes) provides a new method for investigating the chemical processes of the body."

TESTS FOR PASTEURIZED MILKS

The Minister of Health has sent to each local authority and to each medical officer of health a copy of the Milk (Special Designations) Regulations, 1946, which will come into operation on March 1.

The effectiveness of the phosphatase test as a test whether milk has been adequately heat-treated is now well established, and the Minister has decided that compliance with the test should be added to the conditions of a licence for pasteurized milk and tuberculin-tested milk (pasteurized). At the same time he is advised that the plate-count test, as prescribed for these milks in the Milk (Special Designations) Order, 1936, is defective, not only because a wide margin of error appears inevitable in arriving at the result of the count, but more particularly because the test takes account of heat-resistant organisms whose presence is of no material significance for the safety or the keeping quality of the milk. The Minister has, therefore, as an immediate step, and pending any further revision of the conditions relating to licences for these milks which may be necessary, made the new Regulations which rescind the plate-count test and require that both pasteurized milk and tuberculin-tested milk (pasteurized) shall comply with the phosphatase test and with the methylene-blue test in the form in which those tests have already been prescribed for heat-treated milk by the Heat-treated Milk (Prescribed Tests) Order, 1944.

The details of the methylene-blue test, as now prescribed for pasteurized milk, differ from those prescribed in the Milk (Special Designations) Regulations, 1936–43, in relation to raw designated milks. Samples should not be packed in ice for transport to the laboratory, but should be kept at atmospheric shade temperature and protected from the direct rays of the sun.

BLOOD DONORS NEEDED

Reports reaching the Ministry of Health show that in some areas the hospitals' need for blood is now exceeding the supply. Stocks in the "blood banks" are dangerously low. At least 200,000 new donors are needed in the country as a whole. The number of donors has fallen alarmingly since the end of the war. In one area the panel has dropped from 48,000 members to 12,000; in another from 3,000 to 640. Many donors who have returned to their homes, either from the Forces or from war work, have not re-enrolled in their own area. The main cause of the drop in donors is the false impression that transfusion is a form of treatment needed to save lives only in time of war. In fact, during the last six years, the impetus given by the war to medicine generally has led to a greatly extended knowledge of transfusion and a wide expansion of its use. Many doctors are now more aware of the value of transfusion. The needs of hospitals for transfusion in peacetime will never again return to the pre-war level. At present in nine regions alone about 4,000 pints (2,273 litres) of blood are needed for transfusions per week. One hospital which formerly used 80 pints (45 l.) of blood a year now uses 30 to 50 pints (17 to 28 l.) every week. A special appeal is made to those who have been on donor panels to continue their support wherever they are. Those not already enrolled in the Blood Transfusion Service are asked to enrol now at the local blood transfusion depot or when a local appeal is made for new donors.

NURSING RECRUITMENT SERVICE FOR SCOTLAND

A Scottish Nursing Recruitment Service, similar to the one that has been operated in London since 1940 by King Edward's Hospital Fund, is to be set up to advise girls and their parents on opportunities and prospects and to help them choose the proper course of training. This was decided at a meeting in Edinburgh of representatives of all organizations concerned with nursing, which had been called by the Nuffield Provincial Hospitals Trust through its Scottish Advisory Committee. The Secretary of State for Scotland, Mr. Joseph Westwood, said at the meeting that nursing was in competition with many other professions and occupations for women, so that not only must the financial rewards and prospects be good, but nursing must offer a satisfying personal life with reasonable amenities and freedom. Responsibility for recruitment did not rest solely with the young recruits themselves. Publicity campaigns had been organized; nurses had addressed meetings of girls and parents all over Scotland, and women in the Forces were being told about nursing as a possible career; education authorities were being urged to set up pre-nursing courses; and entrants with a period of war service received special allowances. But these measures needed supplementing in ways beyond the intervention of Government Departments, and he welcomed the initiative of the Nuffield Provincial Hospitals Trust, which had undertaken to be responsible for the proposed service. He hoped Scots girls would be encouraged to become nurses; the Scottish Nurses' Training Schools had a reputation second to none.

The Association for the Prevention of Blindness, Bengal, on March 31, 1945, completed the fifteenth year of its existence, and is now recognized as one of the chief public utility services in the Province. The annual report issued from 94, Chittaranjan Avenue, Calcutta, states that propaganda work of the Association was carried out as usual by lectures, with the help of posters, lantern slides, and cinema shows. There are two standard sets of lectures, one on the care of the eyes and the other on prevention of blindness. Twenty-five pamphlets have so far been published.

Reports of Societies

CHRONIC CHOLECYSTITIS

At a combined meeting of the Sections of Medicine and Surgery of the Royal Society of Medicine on Jan. 29, with Dr. T. IZOD BENNETT presiding, a discussion was held on the diagnosis and treatment of chronic cholecystitis.

Dr. MAURICE SHAW said that not much was known about the milder degrees of cholecystitis. He had been accustomed to regard the condition as divisible into two types—an interstitial infection and a catarrhal infection, in which latter the mucous membrane of the gall-bladder was affected but functioning was reasonably good. One question was why extreme flatulence should be associated with the condition. It was usually supposed that gastric flatulence was entirely due to swallowed air, and experience did not suggest that patients with gall-stones were more likely than others to be air-swallowers. His own feeling was that the explanation of the flatulence was not the swallowed air but the increased reflex tension of the stomach, which was relieved by bringing up excessive air.

The mainstay in the diagnosis of cholecystitis was radiology, but it was impossible for the radiologist to say whether the gall-bladder was normal or not, and if his supposition was correct that many of these patients were suffering from a catarrhal condition of the mucous membrane it seemed unlikely that radiology would be able to detect it. Gall-bladders which were radiologically normal, filling and emptying within normal limits, might nevertheless be abnormal. A frequent instance was the patient with symptoms suggestive of gall-bladder disease, with physical signs, but in whom the radiologist could find nothing really abnormal, beyond possibly a slight defect in emptying or filling. Where there were gross radiological abnormalities all would agree that operative surgery was needed. Another indication for surgery was complete failure of medical treatment. A patient with convincing clinical evidence of gall-bladder disease who failed to respond to medical treatment must have surgical treatment, even though, as often happened, the surgeon was reluctant to operate because he had not got all the evidence he wanted.

The type of chronic cholecystitis most amenable to medical treatment was the catarrhal type. Dr. Shaw had never seen any sound reason for placing a patient with gall-bladder disease on a fat-free diet. The idea was based on a misconception as to the role of cholesterol. In diabetes, where there was likely to be a high cholesterol content of the bile, there was no marked tendency to the formation of gall-stones. The argument for withholding fat for fear of increasing the cholesterol content of the bile seemed to break down, and the only other argument for excluding fat from the diet was that many patients thought they could not take it. Usually, however, it was only certain kinds of fat to which they were averse, particularly fried fat, which had a hard envelope. Fats such as butter, eggs, and cream were well tolerated. If the object was drainage of the gall-bladder by non-surgical methods fats were most valuable, and he saw no objection to feeding patients on a high fat diet in the effort to make the gall-bladder contract and empty the bile. Fats should be restricted only when they caused discomfort. Other methods of drainage were often used. Magnesium sulphate had a great reputation, although the actual evidence that it caused contraction of the gall-bladder was not entirely satisfactory. The use of the duodenal tube in this country was not widespread, because it was generally felt that the same result could be obtained by giving drugs by the mouth. Of the drugs most widely used for disinfection—the salicylates, the hexamines, and the sulphonamides—he had had a certain amount of success with hexamine but he was not very enthusiastic. It had to be used in large doses and with caution. Sulphonamides had been successfully used and had been shown to have significant concentrations in the bile.

Radiographic Indications

Dr. G. CALTHROP said that cholecystitis was a disease of the walls of the gall-bladder, and, the gall-bladder and the bile being made up of chemical elements similar to those of the surrounding tissues, *x* rays did not differentiate them. It had been said that the gall-bladder could be seen in plain films. However that might be, whenever he had identified the gall-bladder in the preliminary radiograph, the cholecystographs later on showed it to be in an entirely different place. When the gall-stone contained calcium or when the walls of the gall-bladder were calcified a shadow was produced on the film, just as it was by a barium meal. The same thing happened in cholecystography, which was an adaptation of Rowntree and Abel's discovery that phthalein was extracted from the blood by the liver and excreted in the bile. Recently an entirely new contrast medium, pheniodol *B.P.*, had been produced, disturbing the patient less than the phthalein compounds.

When the gall-bladder failed to fill with and to concentrate the opaque medium four things might have happened: the medium might never have been extracted from the blood; or, like the bile, it might never have been able to leave the liver or to reach the common bile duct; or the iodine content of the bile might have been prevented from reaching the gall-bladder by a calculus, adhesions, or other cause; or, finally, the mucous membrane of the gall-bladder might have lost its power to concentrate the bile, whether gall-stones were present or not (true cholecystitis).

He went on to point out some fallacies. Putting aside congenital abnormalities, a gall-bladder might not be visualized because, so to speak, it was no longer there. Not infrequently cholecystography was requested after cholecystectomy. Improper preparation and poor radiographic technique, such as wrong dosage of opaque medium, movement during exposure, incorrect positioning, and other factors, could and did often mislead.

To sum up, the gall-bladder might be radiologically normal in appearance and function and yet there might be a pathological condition, but if a proper technique had been used and the gall-bladder failed to fill with and to concentrate the opaque medium a pathological condition was practically always present, not necessarily in the gall-bladder or its duct, but usually so. Since radiologically it was not possible to see whether a disease was outside the gall-bladder, due to one or more non-opaque gall-stones or to cholecystitis, there was obviously no direct radiological sign of cholecystitis. When there was only a poor filling and no gall-stones could be seen, care was needed and clinical evidence must be very definite, otherwise it was better to check by a second examination after an interval.

Chronic Cholecystitis without Stone

Mr. A. J. GARDHAM said that cases with a presumptive diagnosis of chronic cholecystitis without stone might be divided into two groups: (1) those in which disease of the biliary system was indicated by the presence of jaundice; and (2) those in which such disease had been diagnosed on less certain grounds. The picture in the latter group as he encountered it was fairly typical. The patient was generally a woman, often of the type or habit traditionally associated with gall-stones, and complained of pain in the right upper abdomen, though never of the severity of a true biliary colic. If the gall-bladder failed to show altogether on cholecystography he generally took it that he was dealing with a cystic duct which was blocked by a stone not opaque to *x* rays. If he was assured of the technical efficiency of the *x*-ray examination he was prepared to accept the evidence that there was no shadow on cholecystography as meaning that a stone was present. In doing so he was taking a risk of being deceived, but he thought the risk was small, for no one would quarrel with the removal of an organ obviously diseased, whether stones were present or not.

The group of cases in which function was shown on *x*-ray examination to be unimpaired or only diminished made a different story. The only justification for operation in cases of that kind was that a timely operation for the removal of a gall-bladder not yet grossly diseased might prevent the formation of gall-stones and the invalidism which resulted from the presence of stones in patients who were no longer in a fit condition to stand the operation of cholecystectomy. His impression was that the patients who suffered from the symptoms generally attributed to cholecystitis without stones were of a younger age group than those who came up with cholelithiasis. If active steps were taken in these cases there would be fewer old people bound to endure the symptoms which resulted from stone without being fit to undergo the major operation. If the theory of infection as a primary cause of gall-stones was

correct, all the cases of frank gall-stones which were seen must have a pre-calculus stage of cholecystitis lasting for years, yet in the majority neither they nor their doctors had thought the symptoms sufficiently bothersome to merit the attention of the surgeon.

Cases which presented a history of jaundice were in some ways more difficult because it was known that disease of the biliary system was present. Most often they came up with an undoubted history of biliary colic and jaundice without *x*-ray evidence of stones. He generally allowed the patient to have two attacks before he advised operation. Operating on these indications he had found gall-bladders apparently normal which when opened contained no stones, but also gall-bladders which on external examination were normal and on opening showed one or more tiny stones ready to pass into the common duct. It was not easy for the surgeon to decide what action to take in these circumstances. The problem before him was whether there was such a condition as dyskinesia of the biliary passages where, owing to a failure of relaxation of the sphincter of Oddi, the pressure in the common bile duct rose to the point where pain was produced without any organic obstruction. The treatment of these cases was a technical surgical problem, and the more one considered the various possibilities the less ready one was to remove a gall-bladder which was not obviously diseased.

Finally, Mr. Gardham mentioned the possibilities of peritonoscopy, by which the gall-bladder was almost always visible unless it was abnormal and buried in adhesions. Although a normal appearance of the gall-bladder did not always exclude the possibility of calculi, it might answer the question whether an operation was necessary. He had found peritonoscopy particularly useful in the type of case in which there was a very severe and persistent jaundice which had at first been regarded as an infective hepatitis, but had finally worn down the confidence of the physician to such an extent that he had called in the surgeon because he thought he might be dealing with a stone in the common bile duct showing abnormal symptoms. Laparotomy in such cases was a very serious matter, and it might be possible by peritonoscopy to establish that the gall-bladder was neither distended nor inflamed. If a normal gall-bladder was seen in combination with a liver moderately enlarged and showing the greenish-slatey appearance it was fairly safe to say that the case was one of infective hepatitis.

General Discussion

Dr. IZOD BENNETT congratulated Mr. Gardham on the very cautious approach he had made in the field of surgery. Cholecystectomy was a major operation, to be avoided if at all possible. He believed that a surgeon would say after he had done ten successive cholecystectomies that he had had grave anxiety about at least one of them. With non-surgical drainage he had on several occasions seen prolonged jaundice clear up. Diathermy had not been sufficiently tried; sometimes striking results had been observed.

Dr. CECIL ATKINSON spoke of the "liverish" type of patient who became depressed and irritable and had a certain amount of giddiness with waves of extreme exhaustion coming on without apparent reason. He believed that these patients were of a type which tended later to get coronary thrombosis, and he was anxious to find out how much was due to gall-bladder trouble as apart from some upset in the liver function itself. One often found a family history of these symptoms. He had made one or two observations on these people, and although they had no signs of jaundice at all and the *x*-ray picture was normal, he had caught them within 24 hours of an attack, and then their condition was suggestive of gall-bladder trouble—perhaps a temporary spasm. He thought that people with symptoms of gall-bladder and liver upset got enormous relief from a reasonable diet, leaving out only certain fats which they could not tolerate. He had found dehydrocholine of value; it stimulated the liver function in some way.

In further discussion Dr. B. O. C. PRIBRAM expressed doubt whether the diagnosis of chronic cholecystitis could be made clinically at all. In 90% of cases of cholecystitis the cause was gall-stones, but the diagnosis of chronic gall-stones gave the practitioner no help. Dr. E. R. CULLINAN said that he was unfamiliar personally with jaundice unassociated with stones, one of them in the common bile duct. The only common forms of jaundice he had seen were associated with the obstruction of the duct by a stone or with gross disease of the liver. Dr. D. GILLESPIE spoke of doubts which must attach to a diagnosis of cholecystitis based on radiological findings alone.

Dr. MAURICE SHAW, in reply, said that he had not argued that hypercholesteraemia was not associated with jaundice; the point he had tried to make was that there was little or no evidence that it was more likely to be associated with gall-stones. The question of fats had aroused some comment, but no one had mentioned olive oil, which had been a very popular form of treatment. Many writers claimed that olive oil relieved the symptoms, and it certainly relieved the flatulence. Referring to the question of coronary thrombosis, he said that whether it was the fact that gall-bladder and liver disturbance in themselves made the patients more liable to coronary thrombosis or whether persons of the type associated with gall-bladder disease were also more liable to coronary thrombosis he did not know. He agreed that disinfection was a rather disappointing form of treatment. He had had patients who felt better after it, but the cure was always difficult to obtain, and when obtained one always had an uncomfortable feeling that perhaps they had never had cholecystitis at all.

WAR DEAFNESS AND THE CARE OF DEAFENED EX-SERVICE MEN

A meeting of the Section of Otology, Royal Society of Medicine, on Feb. 1, Mr. A. J. M. WRIGHT presiding, was devoted to a discussion of this subject.

Army Experience

Mr. W. I. DAGGETT said that in spite of the abundance of clinical material it had been impossible for Army otologists to advance the knowledge of deafness in any revolutionary way. From a scientific standpoint there was little to be gained from small series of cases examined under Army conditions, and his own personal impressions were unsupported by statistical evidence. Every kind of deafness, even senile, was met with by the Army authorities at one time or another. Deterioration of hearing was more rapid under war conditions than in civil life, and under prolonged bombardment might be most marked. He had found perception deafness among the victims of a typhus outbreak. The apathy accompanying this deafness, which made examination difficult, might mask its occurrence in epidemics. The cases went on to complete recovery, which, however, could not be confirmed by audiometry when the convalescent stage was reached. In India, among the Indian (not the British) troops, functional deafness assumed serious proportions. Large numbers of these men, attracted by the good pay and the sureness of the food, had joined up without any particular knowledge of what the war was about, and when conflict arose between personal needs and Service requirements a functional condition resulted. A condition of malingering which went on to induced hysteria was practically unknown in disciplined units where medical officers were alive to the clinical picture. No otologist who had served in military hospitals could avoid the conclusion that the results of treatment of cases of otitis media were better than in civil hospitals, the reason being the painstaking individual attention which was possible for every patient.

The Ministry of Pensions

Mr. GILBERT CHUBB described the procedure of the Ministry of Pensions in the care of the war-deafened, including the arrangements for treatment, aids-to-hearing and lip-reading instruction, and determination of degree of disability and of entitlement. He referred to the difficulty in patients who had had a history of ear disease, but in whom at the time of enlistment the disease was quiescent and the deafness trivial; in Service life the condition was apt to be grossly aggravated, and these patients were eventually discharged with a high degree of deafness. There was a tendency to regard this severe deafness on ultimate discharge as the inevitable result of the sepsis which existed before enlistment. In his view this was a wrong procedure. It was one of the mysteries of otology that a trivial deafness might be found associated with the grossest damage from aural sepsis. The deafness increased in severity when the man was exposed to various unfavourable factors in war conditions, and he thought

it unnecessary to assume that the original sepsis had anything more than a small share in the deafness—in other words, the man should be given the benefit of the doubt.

Noise or gunfire deafness produced a most easily recognizable clinical picture. There might be little or no involvement of the lower frequencies but a very severe loss in the higher. When cases of concussion deafness, of the middle-ear type, were seen, usually long after the injury, it might be impossible to tell to what extent the structure had been involved in the original damage. In the majority of cases the astonishing thing was the correlation between the resulting deafness and the severity of the original cranial injury, contrasting markedly with other cases in which a slight blow on the head, without bone damage or even a scalp wound, might result in severe middle-ear deafness. He added that the Ministry of Pensions was not engaged in original research, and it could not wait until its decisions were based on incontestable facts. Decisions had to be made promptly and with as little risk as possible of injury to the men concerned. Where there was a doubt the benefit of it was given to them.

Rehabilitation

Air Cdre. E. D. D. DICKSON said that deafened Service personnel fell into three categories: (1) those who had some hearing loss before joining and whose defect passed unnoticed; (2) those with some hearing defect which progressively became worse in service; and (3) those whose disability was attributable to service. It was considered to be the responsibility of the Ministry of Pensions to organize schemes of rehabilitation, particularly for those whose disability was due to, or increased by, their service. The Ministry of Pensions would prefer treatment within the Service; postponement until after the patients were discharged made the co-ordination of different forms of treatment impracticable. All deafened and hard-of-hearing patients needed instruction in lip-reading. Patients invalided from the Service on account of deafness should be posted to a rehabilitation centre, where assessment could be made. The speaker outlined the functions and personnel of such a centre, where instruction could be given in classes and facilities for occupational therapy installed on a comprehensive scale.

The PRESIDENT recalled that in the first world war men were recruited without sufficient preliminary examination, and apparently the mistake had been made again. During that first war he had care of a very large number of cases of middle-ear suppuration in hospital and was struck by the good results obtained by routine measures. He hoped that pressure would be brought to bear on the Ministries concerned so that within the next few weeks or months something would be organized for the rehabilitation of these unfortunate people.

Mr. R. G. MACBETH gave his impressions of a recent visit to the Naval Hospital, Philadelphia, which was devoted largely to rehabilitation. A deafened Service man was sent back to his depot, and after a period of leave was directed to the hospital, where he was carefully examined by skilled otologists, and if there was any physical disease, whether attributable to war or not, he was assessed from the point of view of his hearing. If necessary he was given lip-reading instruction. He was placed in a ward with other people suffering from various disabilities, not hearing disabilities alone, and therefore he had less occasion for feeling very sorry for himself, and morale was kept at a high level. Each morning the men received instruction and undertook certain duties, but the rest of the day was free for them to do as they wished, within the framework of a naval organization, and he had seen these deafened men enjoying concerts. They were obviously on the way to becoming useful citizens.

Testing Out the Malingerer

Mr. T. B. LAYTON said that complete deafness in one ear, with the other ear normal, was not such a grave disability as a smaller degree of bilateral deafness, because the individual could compensate by positioning and movements of the head. Many deafened people were able to carry on a conversation with another individual across the table, but were quite unable to follow the conversation of a number of people and therefore were at a disadvantage in social life and in wage-earning capacity. In making tests there were three physiological reactions which should be assessed: the time-lag of the individual, the definiteness of his response, and his power of switching from one subject to another. Auditory attention was both conscious and subconscious. When conscious attention was in opposition to the examiner the person under test was a malingerer, but there were a far larger number of cases in which there was subconscious inattention—the conscious attention was directed to the examiner, but the subconscious was withdrawn. It was always a question of how far this was due to ear defect. He believed that when a person had for a long time been deaf the subconscious attention tended to atrophy. No one should be written down as a malingerer until tests had been performed so thoroughly that the evidence would not break down under cross-examination, supposing the case came into court, as it never did. In such cases as he had described he felt that there was something pathologically wrong with the attention, that it had been damaged either by disease or by external causes, and such persons should be given credit for their disability in the same way as for structural deafness.

Mr. F. C. ORMEROD said that the Ministry of Pensions was much more sympathetic now than after the last war, when it was difficult to persuade the Ministry that many of these cases were aggravated by war service. Mr. R. SCOTT STEVENSON said that a man with chronic middle-ear suppuration but good hearing did not get a pension, yet no otologist would pass such a man for life assurance. Mr. C. HAMBLEN-THOMAS spoke of the difficulty of getting trained technicians to carry out treatment. Out-patient treatment was not as satisfactory as treatment in hospital. Mr. MICHAEL VLASTO said that he was probably the only otologist present who did not use the audiometer. All his work was based on the history of the patient and tuning-fork and voice tests. He did not find that from the patient's point of view he had had any real assistance from audiometric readings. Mr. I. G. ROBIN mentioned the case of a medical man who was so deaf on leaving the Service that he had to give up any thought of returning to his practice; yet he got only 50% disability and was awarded a lump sum of £50. Dr. SIMSON HALL asked whether there had been any research on the causation of nerve deafness by bone conduction—for example, the use of sponge rubber heels to avoid transmitting concussion. Mr. C. P. WILSON stressed the need for teaching not only the patient but his family, who could do a great deal to ameliorate the difficulties arising from fatigue and disturbing noises.

The PRESIDENT, following up Mr. Vlasto's remark, said that during the last two years he had relied entirely on tuning forks because he had not been able to get his audiometer serviced. Until the servicing of these instruments was placed on a better basis their utility would be much reduced.

Nova et Vetera

CARDIAC FOLK-LORE

At a recent meeting of the Section of the History of Medicine of the Royal Society of Medicine Dr. J. D. Rolleston said that it was generally agreed that a scientific study of heart disease did not begin until the seventeenth century. It was not surprising, therefore, that a vast amount of cardiac folk-lore developed and persisted for several centuries. Though the doctrine that lesions of the heart were generally fatal had been wrongly attributed to Hippocrates, it was undoubtedly of great antiquity. There was hardly a trace in classical literature of the severe cardiac diseases which subsequently played such an important part in scientific medicine, and the chief cardiac affections before the beginning of the nineteenth century were merely palpitation and pain in the cardiac region. Parrot had remarked that this ignorance of heart disease in antiquity might seem strange in view of the fact that other affections of less importance were thoroughly studied in ancient times, and suggested that the only explanation of this omission was that the heart was regarded as a sacred organ which it was wrong to touch or study. Even in the time of Erasistratus and Asclepiades knowledge of the heart was so vague that the same Greek word was applied to both heart and stomach, which was doubtless due to the juxtaposition of the two organs separated only by the diaphragm.

Dr. Rolleston said that the folk-lore treatment of heart disease might be considered under general measures, animal cures including coprotherapy, plant remedies, hydrotherapy, metals, and intercession by patron saints. It was noteworthy that in striking contrast with the great majority of diseases the patron saints invoked for the relief or cure were very few in number. Not only had numerous popular remedies been used in the treatment of cardiac disease, but in many instances the heart itself in man and animals as well as heart-shaped animals had been credited with prophylactic and curative properties.

Correspondence

Lay versus Medical Administration

SIR,—Among the vast mass of letters, speeches, discussions, etc., which I have either read or heard in connexion with the proposed national health scheme, I do not recollect any particular reference being made to the very important question of administration; by which I mean, Is the chief officer of the administrative unit—regional, divisional, or whatever it may be—to be a layman or medical man?

We may be quite certain that the chief administrative officer at the Ministry of Health will be as hitherto the Parliamentary Secretary, but what about the regional or other administrative body which is to deal with the work of the unit areas which we understand are to be set up throughout England and Wales? These units will presumably be groups of counties and county boroughs and their membership constituted by representatives of local authorities, voluntary hospitals, and probably nominees of the Minister of Health. Such administrative units will require a staff organization to carry out the duties, responsibilities, and instructions of the joint council of the unit area. It is certain that the staff organization of each area will be considerable in numbers, will consist of both medical men and laymen, and that, as the expert advisers of the joint council upon numerous problems of policy and practice, they will inevitably play an extremely important part in promoting the harmonious co-operation of the various interests represented in the joint council itself and the area or region with which it is concerned.

Judging this difficult and delicate problem from my own personal experience, I hope and pray that the Minister of Health will be persuaded and advised to appoint medical men as the chief administrative officers of these regional organizations inasmuch as the problems to be dealt with are, and will always be, predominantly medical, and will require above all other considerations the whole-hearted co-operation of the medical profession of the regional area. The danger I visualize is the appointment of such persons as the clerks of local authorities as chief administrative officers, and if this is done, then, judging again from my own experience, Heaven help us.—I am, etc.,

London, W.8. FREDERICK MENZIES.

Physical Therapy in Mental Disorder

SIR,—Although I am not a psychiatrist I should like to say how cordially I agree with Dr. T. H. B. Gladstone (Feb. 2, p. 179) in his condemnation of the bullying of relatives to gain their permission for E.C.T. and leucotomy. I have seen this, and also what appeared to me to be the indiscriminate use of electric convulsions and the light-hearted plotting of leucotomy. What successes these methods achieve are bitterly paid for by all the patients with the pain of cutting or pummelling, with fear and dread-hours, the imponderables of intense unhappiness. I have heard "cardiazol" used as a threat for bad behaviour, the curative and the punitive merging.

Particularly do I find Dr. Jan Frank's humour a little nauseating, for in an article by him in *Proceedings of the Royal Society of Medicine* in May last year (1945, **38**, 317) he made it abundantly clear that the patients about whom he was writing had an intense hatred of these methods, though he seemed to view their antipathy with considerable detachment. Perhaps he has not been long enough away from Hitlerite Germany to appreciate our island prejudices against trying to do good by force, against encroaching on the liberty even of the insane any more than is necessary, and against the experimental tinge of Continental medicine. I do not doubt the sincerity and humanity of these shock tacticians or of those whom he is pleased to call "brain-slashers"; nor do I doubt the earnestness of many of the Spanish Inquisitors who thought the immortal soul was well worth a little flame and pain. My tradesman's view is that the soul and sanity may be too dearly bought. At present, so far as I can see, an A.M.O. in a mental hospital, having obtained the permission of the nearest relative by the exhibition of fact or frown or fancy, can then proceed to sentence any patient to have his brain cut or to undergo a series of fits with no appeal. It is high time the Board of Control remembered their duty—the protection of patients in mental hospitals, which are no longer asylums, from violence.—I am, etc.,

Beckley, Rye. C. G. LEAROYD.

Problem Families

SIR,—Dr. S. W. Savage in his paper on "Intelligence and Infant Mortality in Problem Families" (Jan. 19, p. 86) hesitates to draw certain conclusions which are hinted at in his presentation of the figures. He comments, for example, on the fact that "in the families with mothers of average intelligence just over 50% of children were retarded two or more years in the problem families, but under 7% of children in the control families." This would appear to imply that retardation is brought about mainly by neglect of one sort or another, and not by the inheritance of poor mentality as is commonly supposed. To render the issue more scientific, Dr. Savage would agree, the assessment of the children in terms of intellectual as well as scholastic retardation would be necessary. The two, generally speaking, tend to run together, but in the children of problem families the intellectual capacity (only to be gauged by individual testing) might be higher than the educational achievement would lead one to suppose—owing to poor nutrition, lack of rest, loss of school time and other factors of neglect, which might lower the latter. Also, the intelligence of the fathers would need to be measured if the factor of heredity were to be fully considered. Within its limits, however, the investigation was well worth doing, and it is a valuable commentary on a very practical and debated issue.—I am, etc.,

Birmingham. CHARLES BURNS.

Mesenteric Lymphadenitis

SIR,—In Dr. B. O. C. Pribram's letter (Jan. 26, p. 144) it is gratifying to note that with regard to treatment he advocates laparotomy, believing that a certain diagnosis of the condition can be made only when the appendix has already been removed. I whole-heartedly support this advice, and while Mr. Aird's excellent article (Nov. 17, 1945, p. 680) has greatly clarified our views on enlarged mesenteric glands, I would still be very hesitant to withhold surgery in cases of what would appear to be doubtful acute appendicitis, particularly in children.

I have had occasion more than once to regret not having opened the abdomen for appendicitis, but never for having removed an apparently normal appendix. Reflecting over one's cases of right-sided abdominal pain with fever and tenderness in the right iliac fossa during the past few years, I find that while my diagnosis of appendicitis has in most instances been correct, I have removed a good many mildly inflamed or surgically normal appendices. The ultimate cause of the abdominal upset in these cases has often turned out to be a mild infective jaundice, mild dysentery, or nothing more than enlarged mesenteric glands. All the patients have recovered without much anxiety, and in my opinion definitely appeared to benefit by the removal of the appendix, particularly so if mesenteric glands were present. To find the mesentery packed with pink-white glands not unlike outsized boiled sago grains has become rather the rule than the exception in my practice of late years. I do not remember seeing them so frequently before the war, and I have no explanation to offer for their more frequent occurrence now.

If we agree that one of the commonest causes of abdominal pain in childhood or the young adult is appendicitis I feel that it should be kept foremost in our minds and the appendix removed if there is the least doubt.—I am, etc.,

Aylesbury. RALPH H. GARDINER.

Abacterial Pyuria

SIR,—I have read with great interest Dr. David Peters's article on abacterial pyuria (Feb. 2, p. 160). It is gratifying to learn that my original communication first brought the condition to his notice. That paper, which, so far as I am aware, was the first publication on the subject in this country, I have frequently been informed has similarly been the means of making curative

therapy available for many sufferers from the disease. In one instance a surgeon read the article only just in time to prevent him from doing a nephrectomy for supposed tuberculosis. Dr. Peters has not apparently had the opportunity of reading a later but more complete publication of mine on "Sterile Pyuria, with Special Reference to True Infective Abacterial Pyuria" (*J. Urol.*, 1943, **49**, 203). The points he raises on the aetiology of the disease are mostly dealt with there. Syphilis is not a factor and the Wassermann test is negative in these cases. Nor is there any relationship between the disease and Hunner's ulcer. Actually in most cases of the former disease there is no or only very slight pyuria. However, some cases of true infective abacterial pyuria do simulate the syndrome of "Simple Ulcers of the Bladder" described by Fenwick in 1896 (*Brit. med. J.*, **1**, 1133). One of my earlier cases fell into this category, but this is a quite different condition from Hunner's ulcer.

I was also interested in Mr. Hugh Donovan's paper (July 7, 1945, p. 12) on abacterial pyuria, especially the presence of urethral discharge which he had observed in some of his cases. Personally I have not encountered this. Dr. Lydon, in a later issue of the *Journal* (Aug. 4, 1945, p. 167), wrote of the good result he had obtained in cases of urethritis, in which no organisms could be demonstrated in the discharge, by treatment with intravenous N.A.B. It has been my experience that, although such cases do gradually clear up with this treatment, the response is in no way so dramatic or so immediately related to the treatment as that in cases of true infective abacterial pyuria. I very much doubt if there is any relationship between the two conditions.

During my five years of service with the Forces I encountered several cases of true infective abacterial pyuria. Strangely enough one of the first I treated in North Africa in 1942 was just such a case, which had been evacuated to us as one of urinary tuberculosis. By curious coincidence I met the patient at a demobilization centre recently and was interested to learn that he had had no further urinary trouble.—I am, etc.,

Manchester. THOMAS MOORE.

Cardiac Massage

SIR,—I would support Mr. Hamilton Bailey (Jan. 5, p. 29) and Prof. John Morley (Feb. 2, p. 177) in stressing the need for promptness in cardiac massage. Many of us are reluctant to make the incision for it, and stand by, hoping it will be unnecessary, while the life-saving minutes slip by for ever. The indication which I use for action is: "Is the heart beating or not?" It is a simple question, and it is for the surgeon to answer it and not for the anaesthetist, because the decision to massage the heart rests with him and also the job of doing it.

How is the answer to be obtained for certain? The anaesthetist cannot tell from the pulse. He often feels his own pulse in the anxiety of managing the collapsed patient. The remedy is for the surgeon to put his ear on to the patient's chest wall over the heart; the evidence is instantly available. On several occasions I have been able to reassure the worried anaesthetist that the heart was all right, and at other times I have heard nothing, and that silence has fired me into immediate cardiac massage with consistent success. Cardiac silence for 30 seconds means immediate heart massage. With regard to the duration of the massage, I keep on until both hands are tired, at least 5 to 10 minutes. On two occasions I have had the pleasure of the heart restarting and continuing when I was at the point of giving up through digital fatigue.

The guide, therefore, for any case of a failed heart is to put the ear to the chest wall instantly, and if "silence," massage steadily until the heart begins.—I am, etc.,

London, W.1. HAROLD DODD.

Anaesthesia

SIR,—Fashions change in every walk of life. They change in medicine too, and one wonders if they always do so for the best. I refer to anaesthesia. Twenty years ago, when I was a student, hundreds of thousands of successful anaesthetics were given with (*a*) open ether, or (*b*) the very simple Boyle's apparatus. Then came, in the early 1930's, (*c*) the godsend of barbiturate premedication, and anaesthesia, still maintaining its simplicity, stood high.

It still does, but it has got itself wrapped up with a mystic halo of Heath-Robinson mumbo-jumbo, which the average humble general practitioner anaesthetist finds somewhat overpowering. Students and housemen are nurtured on giant contraptions worth hundreds of pounds—and cannot give open chloroform. I am told that avertin is going out of fashion because the pundits say that the dose depends not on the weight of a patient but on the metabolism. A small series of 400 cases, ranging from 7 months to 79 years of age, has convinced me of the great value of avertin, which no academic utterance will change. While appreciating and acknowledging the fact that the specialist anaesthetist *is* necessary in many of the rare and specialized operations, let us not be "kidded" into the impression that this simple branch of medicine is a mysterious cult known only to the favoured few. Let it be hoped that it will not become more over-specialized than it is now, and that the advent of the "premedicationist," the "pentothalist," and the "open etherist" will be long delayed. I do not think that modern anaesthesia, with all its trappings, tubes, taps, and turncocks, is any great improvement on the older methods, and the fact that anaesthetic deaths have not decreased appreciably from the tiny percentage of fifteen years ago may substantiate this. I now, Sir, bow my devoted head and wait for the storm to burst.—I am, etc.,

Aylesbury, Bucks. W. A. BELLAMY.

Responsibility for the Anaesthetic

SIR,—Mr. Lyall certainly "puts the cat among the pigeons" in his letter (Jan. 26, p. 144), and like a dutiful pigeon I rise to join in the required commotion. His suggestion that the choice of anaesthetic is a matter for the surgeon rather than the anaesthetist is belied in his own first paragraph, where he suggests that "respiratory trouble" is an indication for spinal analgesia. I think most anaesthetists will agree with me that this is a contraindication to spinal, since the primary requirement in "chesty" cases is to be able to sit them up in Fowler's position immediately after operation. Cyclopropane is the anaesthetic of choice in these cases, or, if that is not available, gas, oxygen, and ether with CO_2 absorption.

It is just such misconceptions as this which make us claim that the anaesthetist should always have the last word. The surgeon should state his requirements within the operation field—duration, degree of relaxation, etc.—and the method by which these requirements are met is entirely an anaesthetic matter and should be decided by the specialist in that subject. In actual practice, in experience with many different surgeons, I have never had anything but complete co-operation over this matter. The tone of Mr. Lyall's letter suggests that he has been less fortunate in his association with "professional anaesthetists." But if this is so, I believe his experience to be the exception rather than the rule.—I am, etc.,

B.A.O.R. PETER S. CHESHIRE, Fl. Lieut., R.A.F.V.R.

Spinal Analgesia

SIR,—I am still more surprised and perplexed as to why Mr. Lyall (Jan. 26, p. 144) does not use spinal in his appendicitis cases, for the reasons I have given; yet he "invariably" uses this method in resection of the colon, when the patients are older and usually more toxic, less resilient, less able to stand shock, and where a higher level of analgesia is required. As regards "quick" appendix operations, they are very rarely necessary and would be usually very inadvisable indeed. Even so, the spinal is quicker to give, makes the operation quicker to perform, for the reasons I gave, and recovery is as speedy as, if not speedier than, recovery from ether and very much more pleasant. To me it is very satisfying indeed to take the blind off the patient's eyes immediately the last stitch is in and say: "How are you?" and to get the answer: "Very well, sir; is it all over? Thanks very much." This is anaesthesia *par excellence*, and I contend that Mr. Lyall might have attained this with the utmost safety in the great majority of his most interesting series.

Surely spinal analgesia is a most rational method for, at least, all lower abdominal and pelvic surgery. Why saturate

a patient's brain with an inhalation of poisonous vapours and gases or by an intravenous injection of drugs causing complete unconsciousness, which, in itself, puts the patient in the region between life and death and on the way to the latter? The spinal, which desensitizes the lower half of the spinal cord and which can now be safely controlled, is all that is necessary, and is only an extension of local and regional anaesthesia.

I would suggest to Dr. Ronald Woolmer (p. 145) that ether is certainly a factor in chest complications and post-operation cough, since so many patients are excessive cigarette smokers and the bronchial secretion is much increased.

I am convinced that the dangers and failures as well as unpleasant sequelae are due usually to faulty technique, and the objections are very theoretical. For example, Dr. Robert Percival (p. 145) thinks that at sea one could not keep the head low; well, I was not thinking of a destroyer in mountainous seas, and I imagine the conditions for spinal analgesia could usually be quite easily attained. There would be nothing "unsafe" about it; only the discomfort of a possible headache. —I am, etc.,

Ilford. N. BEATTIE.

Penicillin in Ophthalmology

SIR,—In a leading article (Jan. 5, p. 17) you sum up recent publications on penicillin and contrast the effects of the agent with those of the sulphonamides in infections of the eye. While ophthalmologists would agree with much of your article there are three points which need qualification.

1. You state, "Though some experimental evidence has been advanced that they [sulphonamides] are effective in infections of the outer eye when used locally, it cannot be said that there is any real clinical support for these observations." I am convinced, from clinical experience, that the sulphonamides used locally are quite as efficient as penicillin in curing infections of the outer coats of the eye. There are individual cases that respond to sulphonamide but not at all to penicillin, while a certain number respond very pleasingly to penicillin. In blepharitis I find a great many more cases benefit from thiazamide ointment (mentioned in your columns, 1943, **1**, 605) than from penicillin ointment, but a certain number resent thiazamide but respond to penicillin ointment. The case for sulphonamides by local application is still worthy of consideration.

2. In ophthalmia neonatorum Sorsby (quoted in your article) supplies interesting results from the use of penicillin drops. The obvious disadvantage is that it is a whole-time job for one nurse to carry out the treatment. Just as good and quick results are obtained by giving sulphonamides by mouth without the necessity for taking the infant into hospital or upsetting the mother/infant routine reaction. This is the chief ophthalmic condition where sulphonamide by mouth is indicated.

3. In trachoma, from experience of only a few cases, some are quite definitely relieved by sulphacetamide drops, while others do not respond or are actually made more irritable. I cannot say I have seen a clinical cure from this treatment. One case is worth special mention. No help whatever was obtained from sulphonamides by mouth or locally. A troublesome thick mucopurulent discharge has resisted all local treatment except penicillin. The latter has controlled the discharge and made life bearable for the last fifteen months. It has not cured the trachoma, but the natural cure, cicatrization, is slowly proceeding.

Obviously we must know more about the mode of action of both sulphonamides and penicillin, and perhaps more about the infecting organisms, before the correct choice of drug and best method of use can be determined. Neither penicillin nor sulphonamides make an ophthalmic "cure-all" yet.—I am, etc.,

Worcester. I. LLOYD JOHNSTONE.

Surgical Catgut

SIR,—It is with the greatest reluctance that I write to you a further letter on the subject of surgical catgut, but I feel that the letter of Sir Weldon Dalrymple-Champneys (Jan. 26, p. 147) requires an answer. He seems to be concerned with departmental administration of some Act of Parliament; I was concerned with the freedom to use the material I wished to use, and not that which I am directed to use. I readily accept his corrections, but they appear trivial and do not affect my argument. I will refer to these points later.

Messrs. Thackray inform me that they are not allowed to import Davis and Geck's catgut. The Import Licensing Department refused the licence on the ground that the Directorate of Medical Supplies stated that ample supplies were available in this country, and also on the ground that it was still necessary to conserve foreign currency. Now either the Directorate of Medical Supplies believes that one catgut is as good as another or that the supplies available are as good as any that could be imported, or that we must make do with inferior material owing to the overriding political necessity for conserving foreign currency. It is in connexion with the last possibility that the vast sum expended on American cinema films makes this argument applied to the relatively small sum involved in importing catgut ridiculous.

With regard to the question of sterility, I had in mind (though for the sake of brevity I did not define my meaning) the loose surgical sense rather than the bacteriological. I meant that not only was the substance sterile when implanted in the tissues but it remained sterile. All surgeons, especially those with experience in bone surgery, will recollect many sterile substances which when implanted in human tissues become ultimately the seat of infection. The American catgut usually had a small amount of antiseptic (e.g., biniodide of mercury) in it to prevent this. The London Hospital catgut is similarly treated. And here I would like to acknowledge the courteous help I have received from the London Hospital Ligature Department since this correspondence has started. On their advice I am using 40-day instead of 20-day catgut in the abdomen, and so far it is satisfactory. I used to use 20-day Davis and Geck, and this seems to indicate a variation in units or the fallaciousness of their estimation. I realize the unit is more or less artificial and that each batch cannot be tested biologically for absorption rate. Incidentally, I may state that the raw material for the London Hospital catgut is imported from New Zealand. I have had no sepsis attributable to this catgut.

The relative merits of catgut can be determined only in human tissues and not in the laboratory, and if foreign catgut is excluded on commercial or political grounds then it is perfectly fair to say that these grounds are interfering with the scientific atmosphere. If English catgut is as good as foreign then it can stand up to competition. If it is not, then the sooner we import some the better. Coming events cast ominous shadows: control and direction threaten us in every direction, and I am concerned that we should not without the strongest and most overwhelming reasons submit to infringement of our liberty.—I am, etc.,

Hove. H. J. MCCURRICH.

Paralytic Ileus

SIR,—Mr. Alan Shorter (Feb. 2, p. 177) gives an admirable account of some common causes of post-operative paralytic ileus and suggestions for minimizing these, with which I could not agree more. He continues with a scheme of treatment with which I could not agree less. It appears that even now we are not, in this country, fully conscious of the absolute necessity for maintaining intestinal decompression by means of suction-drainage in the prophylaxis and treatment of this most dangerous condition.

In America, where most of the pioneer work on intestinal decompression has been performed, particularly by Owen H. Wangensteen on duodenal suction-drainage and Abbott and his followers on intestinal suction-drainage with the Miller-Abbott tube, the need for suction-drainage is no longer questioned. The published evidence is too overwhelming. It is, I imagine, because our minds have been so long fixed upon the problems of war surgery that we have failed to keep abreast of modern developments which are now well beyond the experimental stage. Yet even that is surprising when we have so many of us seen the effects of continuous suction-drainage after operation for penetrating wounds of the intestines. The following com-

ments on the prophylaxis and treatment of paralytic ileus appear justified:

1. As Mr. Shorter describes, poor anaesthesia, rough surgery, dehydration, toxaemia, pain, exhaustion all play a part in the causation of paralytic ileus, and any scheme of treatment must attempt to eliminate these factors so far as possible. I agree entirely with the use of morphine, because it will relieve pain, anxiety, and sleeplessness. I do not believe it has any helpful direct effect upon peristalsis; indeed, in big doses its direct effect is probably harmful. For that reason I hold that repeated small doses—gr. 1/8 (8 mg.) eight- or twelve-hourly after an initial gr. 1/4 (16 mg.)—should be employed.

2. Mr. Shorter is undoubtedly correct in saying that the precipitating cause of ileus is the failure to prevent slight and early post-operative distension from developing into frank paralytic ileus. This is best prevented by post-operative intestinal decompression by duodenal suction-drainage in every case in which ileus is considered a likely hazard, particularly if the patient starts off post-operatively with an initial pathological dilatation (e.g., after operative relief of obstruction). The whole aim and object of this decompression is the prevention of the vicious circle which is the inevitable result of passive dilatation if it is allowed to reach a certain stage, dilatation causing paresis and paresis allowing further dilatation.

3. As regards the use of intestinal stimulants, I can do no better than quote Holt, who says: "Purgatives and drugs which normally stimulate peristaltic action are contraindicated. The habitual use of such drugs as pituitrin, eserine, and acetylcholine in the post-operative treatment of these cases is to be strongly condemned. Occasionally their use produces the dramatic relief of intestinal distension, but their successes are far outnumbered by the majority of cases which are made worse by such treatment. It should be borne in mind that the cause of the trouble is a paresis of the intestinal muscle, which will resume its function when it has recovered its tone. This recovery is best facilitated by resting the gut as much as possible."

4. If ileus develops in the absence of, or in spite of, duodenal suction-drainage intestinal decompression with a Miller-Abbott tube is obligatory. The phrase "gastric suction with a Miller-Abbott tube," used by Mr. Shorter, is a contradiction in terms. The stomach is emptied with a large stomach tube and the Miller-Abbott tube is then passed into the small intestine. Abbott describes the subsequent progress thus: "Whether the cases develop following intraperitoneal procedures or reflexly following injuries or operations on other parts of the body, a tube in the small intestine will progress from region to region, restoring peristaltic activity, until the balloon is expelled by rectum."

5. Naturally, fluid and chloride must be replaced by vein (and, it appears, protein too), but the enormous volume of fluid withdrawn by suction does not mean any greater necessity for intravenous fluids, for stagnant fluid left in the dilated intestine is just as much lost from the general circulation as that withdrawn by suction.

6. The principle of providing physiological rest for the dilated intestine appears to me a much sounder one than an attempt to coerce the gut into contracting while it is dilated and therefore at a great mechanical disadvantage, and the results I have had, using decompression and no intestinal stimulants, have confirmed me in this belief.

—I am, etc.,

Kensington. RODNEY SMITH.

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SIR,—Most doctors would concede that a personal experience was worth several of those of their patients. When I had paralytic ileus for a short period following a resection of gut some years ago I was treated with ox-gall enemata and injections of prostigmin. It was the most painful and exhausting business I ever hope to experience. And when, after flogging my bowel in this manner, the sister was able proudly to show the surgeon a small faecal object in the bedpan, even he was compelled to observe somewhat gloomily that "one swallow did not make a summer." By contrast those patients who at this time were beginning to be treated by morphine, suction, and intravenous fluids, enemata being withheld until bowel sounds were audible —these had a far smoother passage.

Perhaps you will also permit me to pour scorn on the efficacy of a flatus tube in this condition. He is a "poor fish" who cannot empty his own lower rectum. The tube does nothing for his distension and is very uncomfortable to sit on.—I am, etc.,

R.A.F., West Kirby. MICHAEL HARMER.

Stethoscope versus X Rays

SIR,—May I summarize the results of my experiences in a few sentences.

1. The *x*-ray skiagram is indispensable for both the quantitative and qualitative analysis of lung tuberculosis, leave alone for the diagnosis of neoplasms and for the assessment of dust diseases. Although thoroughly and skilfully performed sounding will continue to be used for guidance, especially in the practitioner's consulting room, the student should be taught that completely negative findings must not be considered as ruling out pathological changes of considerable extent.

2. The interpretation of the auscultatory signs has profited substantially from co-operation with radiology. We have learned that more often than not bronchial breathing is missing in the presence of a cavity, which should be suspected as well from other auscultatory phenomena; that fibrosis and shrinkage may produce bronchial breathing. Diagnosis with the stethoscope has gained in accuracy.

3. There are not few occasions when the findings of auscultation are valuable or even decisive—e.g., for the identification of a cavity buried in the uniform opacity of fibrous, exudative, or caseous tissue. The evaluation of the respiratory functional potential is impracticable without the stethoscope; bronchial secretion and bronchial spasm with their detrimental effect on the air passage will be heard, but, as a rule, not seen. The importance of the auscultatory findings in cases of bronchiectasis need not be stressed.

4. The stethoscope is likely to provide a better opportunity for the doctor to concentrate on the general aspect of the patient than the *x*-ray examination, and to facilitate psychological contact.—I am, etc.,

Westmorland Sanatorium, Grange over-Sands. E. FRAENKEL.

SIR,—In reply to the letter of Dr. J. Frankland West (Feb. 2, p. 182) the data given in his letter merely show that the interpretation of an *x*-ray film by a particular radiologist was an incorrect one. The radiograph did, in fact, show the pulmonary lesion in question, and is not, therefore, to be condemned as having missed an early tuberculous lesion, but it is the interpretation of that skiagram that has been found to be in error. Surely general practitioners as a whole are not to be condemned because one practitioner has missed diagnosing a case of acute appendicitis. Does Dr. West claim that he himself is infallible?

It is not always possible for the radiologist to state the aetiology of a pneumonic consolidation from the skiagram. In some cases further details are necessary, such as the result of the clinical examination, together with laboratory tests, etc., before a diagnosis can be made. It would appear to me (without having seen the film) that the report should have read: "There is loss in translucency in the affected zone or zones of the lung." This may be due to tuberculosis, atypical pneumonia, lobar pneumonia, or lung abscess. The subsequent progress under serial *x*-ray observation will help in the diagnosis together with clinical and laboratory evidence.

Chest physicians and tuberculosis officers are well acquainted with segmental and lobar areas of consolidation which are found subsequently to be tuberculous in origin. In fact, mass radiography is responsible for the detection of an appreciable number of similar cases in persons who are completely symptomless. This type of tuberculous lesion is, as a rule, found in young adults, especially young women between the ages of 14 and 25. Dr. West's case had both symptoms and physical signs, whereas the value of mass radiography is in the *x*-ray of *apparently* healthy people for the detection of early disease. That mass radiography has fully justified itself as a means of detection of previously unsuspected disease is now beyond question. Inspection of published results confirms this statement.—I am, etc.,

Nottingham. A. E. BEYNON.

SIR,—Dr. F. Kellermann's letter (Feb. 2, p. 182) puts the matter in a nutshell. The last paragraph embodying the results of the test sponsored by the American Trudeau Society is particularly interesting. *Finis coronat opus.*

Even those of us who have studied under masterly exponents of clinical examination of the chest, such as the late Sir Robert Philip, founder of the tuberculosis dispensary system, have been

compelled reluctantly years ago to realize the limitations of the stethoscope. It may be confidently stated that anyone who claims to diagnose early (I say advisedly "early") pulmonary tuberculosis, or for that matter carcinoma, with the stethoscope alone is a fool, a charlatan, or a superman. *X*-ray examination, of course, has its shortcomings, and experienced specialist radiologists with all modesty are themselves among the first to admit this. However, with the progress of research the *x*-ray plant is likely to become an instrument of greater precision in the near future.

Although this correspondence is primarily concerned with the stethoscope and *x* rays it may not be out of place to refer briefly to examination of the sputum. This line of investigation has been sadly neglected, particularly in those patients who cannot or will not attend the hospital out-patient department or clinic and are labelled "debility," "anaemia," "chronic bronchitis," etc. Even in certain cases which have been subjected to intensive clinical and radiological observation the finding of acid-fast bacilli in the sputum is often the decisive factor in diagnosis. Beware, however, the single sputum-positive report unless adequately supported by clinical and *x*-ray evidence. In such a case repeated sputum examinations are necessary.

It is essential, therefore, to take an unbiased, broad, flexible view of the whole subject, and, in addition to a carefully taken history, to use every available method (clinical, *x*-ray, and laboratory) if diagnosis and assessment are to be thorough and complete. The majority of us would prefer, I imagine, to hear less of "the stethoscope *versus* *x* rays," and more of "the stethoscope *plus* *x* rays, *plus* sputum examination," with closer co-operation between the clinician, radiologist, and pathologist.—I am, etc.,

Tuberculosis Dispensary, Chester. DAVID W. TOUGH.

D.D.T. Poisoning

SIR,—I have read the comments on our article "Fatal D.D.T. Poisoning" (Dec. 15, 1945, p. 845) by Dr. I. E. Balaban (Jan. 26, p. 147) and wish to give further reasons why we concluded the cause of death in the child was due to D.D.T. rather than to the kerosene. In addition to Experiments I and II described in our article, we carried out other experiments which were not included for the sake of brevity and because they were of dosage apparently outside the minimal oral dosage of 5% D.D.T. in kerosene required to cause toxic effects. They have now, perhaps, some interest in respect to the question raised by Dr. Balaban as to the toxicity of kerosene to baboons. The experiments (including Experiments I and II of the article) were as follows:

Expt. No.	Weight of Baboon	Dose (Orally)	Dose in c.cm. per kg. Body Weight	Result
	lb. kg.			
IA	7 (3·2)	10 c.cm. 5% D.D.T. in kerosene	3·1	Baboon unaffected
I	6½ (3·0)	9 c.cm. kerosene	3·0	,, ,,
	7 (3·2)	15 c.cm. 5% D.D.T. in kerosene	4·7	,, ill
II	7 (3·2)	15 c.cm. kerosene	4·7	,, unaffected
	7 (3·2)	30 c.cm. 5% D.D.T. in kerosene	9·4	,, died (1 hour)
III	6 (2·7)	25 c.cm. kerosene	9·4	,, unaffected
	6 (2·7)	27 c.cm. 5% D.D.T. in kerosene	10·0	,, died (45 mins.)
IV	6½ (3·0)	30 c.cm. kerosene	10·0	,, unaffected
	6 (2·7)	60 c.cm. kerosene	22·2	,, ,,

Experiment IA was a preliminary one in which the dosage per kilo was the same as that of the child (10 kg. body weight ingesting 30 c.cm. 5% D.D.T. in kerosene). Experiment III was supposed to aim at a dosage between that of Experiments I and II, but owing to a miscalculation only confirmed the results of Experiment II. Experiment IV is an observation from another series of experiments on D.D.T. not related to the above investigation. Necropsy on this animal 30 days later showed no abnormality macroscopically or microscopically.

The results and deductions made were: (1) Toxic effects were only seen in the series receiving kerosene plus D.D.T., though none of the control series was affected. (2) It is therefore reasonable to assume that the toxic effect in the baboons was due to the D.D.T. (3) It will be noted that the baboon mentioned by Dr. Balaban (Experiment II, 9.4 c.cm. per kg.) had more than three times the amount of kerosene ingested by the child (3 c.cm. per kg.), and that the baboon in Experiment IV (22.2 c.cm. per kg.) had no less than seven times the dose, yet with no ill effects.

Dr. Balaban mentions that D.D.T. in organic solvents can be potentially dangerous, but his quotation of the annotation in the *Journal* (March 10, 1945, p. 338) is so written as to discredit this statement. The annotation quoted suggests that D.D.T. dissolved in organic solvents would have to be ingested in exceedingly large volumes to be toxic. That this estimate of the low toxicity of D.D.T. to human beings is a little too optimistic is surely shown by the later experience of Wigglesworth (1945) and Case (1945), who both found D.D.T. dissolved in organic solvents toxic to human beings even by skin absorption.

It is true, however, that the evidence regarding toxicity of kerosene is conflicting. Waring (1933) described 2 deaths out of 23 cases, Nunn and Martin (1933) 6 deaths out of 65 cases, and Farbaugh (1936) 5 deaths out of 120 cases of kerosene poisoning by ingestion. More recently Lesser *et al.* (1943) describe 1 fatal case out of 32 cases in children aged 1 to 3 years, and dosage varying from one swallow to half a glassful of kerosene. The fatal case was that of a child aged 18 months who ingested 150 c.cm. of kerosene and died within 5 hours. They also quote the case of an adult who ingested 750 c.cm. of kerosene with apparently no ill effect. Deichmann *et al.* (1944) describe the case of a child aged 1 year who died 9 hours after drinking one mouthful of kerosene. They calculate that the fatality rate of published cases is 6.7%. Dr. Balaban's criticism is fair criticism in that kerosene can cause death in small children.

At the time of writing the article we had not access to the literature on kerosene published above, but our baboon experiments implied that the grade of kerosene used (and there are many grades, *vide* Deichmann *et al.*) was non-toxic even in large doses. From the experiments of Smith and Stohlman (1944) and Woodard *et al.* (1944), who found that for small mammals lethal oral doses of D.D.T. in vegetable oils were 150 to 600 mg./kg. body weight, we calculated that a 10-kg. child would have to ingest 30 to 120 c.cm. 5% D.D.T. in kerosene to show lethal effects. The fact that the child did ingest 30 c.cm. 5% D.D.T. in kerosene was thus in accordance with these deductions.—I am, etc.,

Newcastle-upon-Tyne. K. R. HILL.

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The E.S.R. Technique

SIR,—Dr. J. W. Shackle (Feb. 2, p. 181) says: "It is not serum, of course, but let that pass." Hutchison and Hunter (*Clinical Methods*) call the clear fluid that settles at the top when blood is allowed to stand "serum" fourteen times in three pages (600–2). What is good enough for them is good enough for me. Dr. Shackle states that my remark that "the higher the column of blood the greater will be the amount of clear serum to be read off" is an "error of great magnitude." But when I take two Westergren tubes and fill one up to 200 mm. and the other up to 100 mm. with the same blood, and find at the end of an hour, as I have done repeatedly, that the length of the column of clear fluid above the erythrocytes in the former is precisely double that in the latter, I must take leave to believe my own eyes rather than Dr. Shackle's statement that "it is just positively not true." His Gilbertian accusation that I might just as well say that I (or preferably he) would drown five thousand times faster in the Pacific than in the deep end of a swimming bath is like "the flowers that bloom in the spring," and has "nothing to do with the case."

Presumably one's drowning rate would be equal in either eight or eight thousand feet of water.

"No reputable firm sells sedimentation tubes with jagged ends"; but my tubes were made, or marketed, by a reputable firm, and they have ends jagged, or irregular, enough to let in air unless I wet my finger.—I am, etc.,

Stowmarket. H. S. GASKELL.

Tuberculosis in Childhood

SIR,—The magnitude of this problem may be assessed by the Lancashire figures. In a population varying during the war years from 1,900,000 to 1,837,000 the deaths from tuberculosis in children have been as follows:

	Five-year Averages			1943	1944
	1928–32	1933–7	1938–42		
Pulmonary tuberculosis:					
Aged 0–5 years	7	3	7	8	8
Aged 5–15 years	22	15	9	6	4
Non-pulmonary tuberculosis:					
Aged 0–5 years	75	57	59	56	66
Aged 5–15 years	43	34	25	27	22

The deaths from meningitis in children 0–5 have been a little less than half the total for all other age groups combined (i.e., up to 65). Dr. Gaisford in his article on primary tuberculosis in childhood (Jan. 19, p. 84) speaks of "scores of infants dying from tuberculous meningitis." In the administrative county area in a population given above the deaths in the age group 0–5 in 1943 were 36.

How can tuberculous meningitis be greatly reduced or prevented? In the Lancashire research on *The Fate of Young Children in Tuberculous Households* (C. Tinling & Co., Ltd., Liverpool, London, and Prescot, 1929, p. 37) one of the conclusions ran:

> "The death rate from non-pulmonary tuberculosis of children exposed to risk in tuberculous households from an adult with positive sputum was greatly in excess of the rate from the same cause in the geographical county of Lancaster serving as the 'control,' the rate being: nine times greater in the age group 0–1; fourteen times greater in the age group 1–2; nineteen times greater in the age group 2–5. This great excess of non-pulmonary tuberculosis is mainly due to deaths from tuberculous meningitis, which accounted for two-thirds of the mortality in the non-pulmonary group, ages 0–5."

When, therefore, we more thoroughly find, isolate, educate, treat, and rehabilitate the adult positive case this distressing mortality in young children will be prevented, and then, and only then, will the tuberculosis physician and the paediatrician be satisfied.—I am, etc.,

Preston. G. LISSANT COX.

SIR,—Reluctant to enter into the somewhat veiled controversy about childhood tuberculosis and its management, on which opposed views threaten to become overt in the correspondence columns of your *Journal*, I must disagree with the assertion in Dr. Stephen Hall's letter (Feb. 2, p. 180) that the importance attached to this disease by paediatricians seemed to him "almost dilettante." The implication that a section of our profession could magnify the significance of a disease, preventable, yet fatal to more than 2,000 children annually in England and Wales, is false. In 1936–8 the average yearly number of deaths from primary tuberculous meningitis alone was 2,322, and in 1941 was 2,933, 80% occurring in children. It is true that adult-type tuberculosis kills ten times as many victims and causes 100 times as much suffering and ill-health, but such comparisons lead us nowhere. Biologically it may be no less desirable to save the life of one child than that the lives of ninety and nine phthisical middle-aged should be prolonged. I am certain that there is no real divergence of opinion on the paramount need to safeguard the nation's children.

One reads on every hand the categorical imperative: "Protect your child against diphtheria," but child deaths from tuberculous meningitis are at present of a similar order of magnitude in this country. At some future date we may see B.C.G. vaccination (and the consumption of pasteurized milk) advocated with equal colour and emphasis on our hoardings, cinema screens, and in our newspapers. I am unaware that our tuberculosis service is promoting research on these lines in contrast to the practice in Scandinavian and other countries of conferring by this means a partial immunity on newborn infant "contacts" and Mantoux-negative reactors at risk in the older age groups. For this reason alone we have little cause for complacency.

Dr. Stephen Hall also makes the mistake (but in reverse) that Dr. R. M. Orpwood objects to in his letter (p. 180) by placing in his turn an excessive reliance on local mortality statistics, while tending to disregard the clinical impressions of others. That "it doesn't seem a great problem" does not hold everywhere. In the *Medical Officer* (June 24, 1944) I wrote of our experience of tuberculous meningitis in an urban community of 300,000 people during the first four years of war. Then we had 97 deaths, of which 74 were in children under 15 years, 53 in those under 5 years. (During the same period we lost 56 children under 15 years from diphtheria.) Due to the fluctuating number of the child population at risk we could only guess at the true occurrence rate, which may have been 100% higher than in peacetime.

As we have only one children's hospital it is possible that any paediatrician might truthfully aver that he had seen one or more "scores" of meningitis deaths *over a short period of years*. This probability was even likelier in London, where Dr. W. Allen Daley (*Journal*, Oct. 10, 1942, p. 417) revealed that the rate of new cases of tuberculous meningitis per 1,000 living was 250% greater in children in 1941 compared with 1938.

In infants tuberculosis is one of the most fatal of diseases; at pre-school age it becomes less so, and is comparatively harmless during school life. Age is thus a factor in determining mortality, but more critical perhaps is the presence of contact with a continuing source of infection. Many more "preventoria" are necessary, so that we may be able to rescue for a time from the hazards of their environments the smaller children from the poor and infected families.

In a city of 60,000 children 50 to 60% will have passed safely through their primary infections when they reach school-leaving age. By simple arithmetic one can calculate that, if all this infection and disease could be detected (by tuberculin surveys and mass radiology) and were evenly distributed in time, that city would require a children's sanatorium of 1,000 beds, capable of dealing with 2,000 to 3,000 cases each year. The contention commonly aired by paediatricians, that, ideally, all primarily affected children should be treated in sanatoria, scarcely seems defensible, nor would it be possible to effect.

At Papworth no child out of several hundreds born there in 30 years has died from generalized tuberculosis. Tubercle in childhood loses many, if not all, of its potentialities for disease and tragedy where housing is adequate, work and wages secure, diet satisfactory, combined with close medical supervision of those living in the infectious *milieu*. That lesson, taught so that he who runs may read, has yet to be learned by most of us. When it is, our wrangles on this subject will lapse into mere dialectical exercises. In the meantime we must constantly use our own influence to bring about this socio-economic amelioration.—I am, etc.,

Kingston-upon-Hull. R. HARDY.

SIR,—May I take up a point in the concluding remarks of Dr. Wilfrid Gaisford in his excellent review on primary tuberculosis in childhood (Jan. 19, p. 84). Quoting Nelson he writes: "The ideal procedure would be for him [the average general practitioner] to do tuberculin tests on all children . . . and order *x*-rays on all positive reactors and their contacts." How wonderful it would be if this could be fulfilled! From my own experience of general practice I have often been gripped by a sense of terrible frustration, sometimes amounting to anger, when faced time and time again by a household containing a tuberculous adult and the bairns running freely around—nobody caring. The tuberculosis authorities do not appear to have the staff to visit all such cases, and in any event where can the children go? The terrible housing shortage caused by the war accentuates the problem. The general practitioner has hardly the time to do routine Mantoux tests on all children and *x* rays are not in his power to order.

It is this last point which is of decisive importance. To-day the *x*-ray examination of the chest is as much a part of a

clinical examination as percussion or auscultation. When René Laennec invented the stethoscope more than 100 years ago he gave to the profession a modern scientific instrument which proved invaluable. For more than 50 years it has been impossible to think of a doctor without also thinking of a stethoscope.

Roentgen's discovery of *x* rays has opened a new door, but as yet the general practitioner is not in possession of this mighty weapon in the pursuit of tuberculosis. The possession of his own *x*-ray plant is beyond his means, but to-day a new system in the organization of medical practice presents us with an opportunity to give the general practitioner what he has long waited for—his own *x*-ray plant, where he may radiograph the chests of his own patients. I refer to the health centres which the Minister of Health will introduce when the health Bill becomes law. The general practitioners and others interested in his work must insist that in these new institutions there must be modern *x*-ray plant and a skilled radiographer, so that G.P.s may readily radiograph their own patients, whether children or adult. If this is done, and full facilities for the scientific practice of medicine are given to the G.P., the much-talked-about "shortcomings of the average general practitioner," which frequently recur in scientific books and periodicals, not to mention the lectures to students by the clinical teachers themselves, would be remedied before many more years have gone by.—I am, etc.,

Newcastle-upon-Tyne. P. W. ROE.

Sulphonamide Control of Streptococcal Epidemics

SIR,—May I call attention to a statement in the annotation under the above heading (Feb. 2, p. 168) to the effect that "mass chemoprophylaxis did not induce sulphonamide hypersensitivity among the men, *nor did it produce sulphonamide-resistant strains of streptococci*" (italics mine). I have not yet had the opportunity to see the paper by Commander Coburn referred to, but in a report on the whole of this chemoprophylactic work (Navmed 284) published by the Bureau of Medicine and Surgery, Navy Department, Washington, D.C., in 1944 or early 1945, there is a footnote (p. 33) which says: "During the summer months (since this report went to press) clinical and bacteriologic findings have indicated that strains of Types 19 and 17 recovered at this naval activity are resistant to prophylactic doses of sulfadiazine."

Much more important is the paper published in the *Journal of the American Medical Association* for Dec. 1, 1945 (**129**, 921) by Epidemiological Unit No. 22, which gives an account of a major epidemic of streptococcal disease which occurred in one of the camps where sulphadiazine-resistant strains became predominant (Types 19 and 17). There seems to be no doubt that the adoption of mass chemoprophylaxis was, in fact, followed by the appearance of these resistant strains, in this instance at any rate—and that it had serious consequences.

It is a disquieting reflection that these sulphonamide-resistant streptococci may have been widely distributed in the world by the trainees of this and other U.S. camps.—I am, etc.,

LEONARD COLEBROOK.

Quinine for Induction of Labour

SIR,—In your issue of Jan. 19 the Ministry of Health gives notice that quinine may now be used for the induction of labour. It is unfortunate that a thoroughly bad practice which is productive of many stillbirths each year should thus be revived.—I am, etc.,

London, W.1. F. NEON REYNOLDS.

The Disabled Persons Register

SIR,—Dr. J. S. Laurie is to be commended for giving careful thought to the Disabled Persons Act and the duties which arise therefrom (*Journal*, Feb. 2, p. 183), but unfortunately his interpretations are misleading, his conclusions erroneous, and his observations unjust. Employers who advise their employees to register are not "unscrupulous." Employees who accept such advice are not "victimized." There is no new "racket." In refusing to give a certificate or to assist in registration because a disabled man is already in regular employment, Dr. Laurie displays misunderstanding of the Act. He argues that if a patient "has hitherto been regularly employed and is presumably a valuable employee" he cannot be substantially handicapped. But the disabled person who is once given the opportunity is nearly always a valuable employee. The very purpose of the Act is to see that every disabled person becomes a valuable employee and that every disabled person is in regular employment. It will not be suggested as soon as we have succeeded in this purpose that none are disabled and none worthy of registration. Meanwhile, is a man to be penalized because he has done for himself that which we are trying to do for others? Is an employer to be penalized because for some years he has done a duty which is now to be forced upon him? One disabled man may already have gained employment whereas another is hoping shortly to gain employment; but in each case the problem is the same—is there a handicap in the open labour market, in competition with his fellows, in future days when there may be unemployment as well as present days when there is almost full employment, not for *any* work but for the most skilled work which he can take and keep on his merit? If there is a substantial handicap he should be registered; if there is no substantial handicap he should not be registered.

In many cases the decision is easy; the disability may be so grave that there is obvious need for protection, or even sometimes for the special conditions of sheltered occupation; or, on the other hand, the disability may be so trivial that there is clearly no need for registration. In such cases the Disablement Rehabilitation Officer will accept the recommendation of the patient's doctor and act accordingly. In other cases the decision is not easy; it is a border-line case. But still there need be no anxiety on the part of the doctor; the decision is not "imposed on the G.P." All that is required is a simple statement of the functional capacity of the patient on one of the officially prepared forms or on any certificate which the doctor may prefer. The decision as to whether or not registration is merited will then be made by the Disablement Advisory Committee of the region, a committee of employers, employees, and doctors which will maintain reasonable uniformity throughout the region and in due course, with added experience, throughout the country.

It may well be that in early days some patients will gain at least temporary admission to the register whose justification for registration is slender. If this does happen no serious harm will have been done. But the opposite danger is very real. The quota of disabled persons who must be engaged by every employer has been established provisionally at 2%, but the figure will be determined from time to time in accordance with the number of persons on the register. If any large number of disabled persons fails to register through pride or indifference, through failure to recognize the advantages to be gained, or through neglect of their responsibility to others who are disabled, the quota will be lower than it should be and the whole purpose of the Act will fail. It is therefore the duty of all employers, and likewise of all doctors, to see that every disabled person with a genuine handicap in seeking or keeping employment is recommended for admission to the register. If any doctor is in doubt he should ring up the nearest Exchange and ask for the Disablement Rehabilitation Officer who will be honoured and delighted to accept an invitation to co-operate.—I am, etc.,

REGINALD WATSON-JONES,
Chairman of the Medical Committee, National Advisory Council of the Ministry of Labour and National Service.

London, W.1.

SIR,—Dr. J. S. Laurie is exposing not a "racket" but what is probably a commendable effort on the part of enlightened employers to ensure that their disabled employees take advantage of their rights under the Disabled Persons (Employment) Act, 1944. If there is a weakness in the Act it is not that too many but too few disabled people will register; but I believe this weakness will, in time, be overcome by the guidance of well-informed doctors and employers and the Press. Dr. Laurie will find his difficulties resolved by a visit to the Disablement Rehabilitation Officer at a labour exchange, who will, I have found, gladly explain the workings of this excellent Act and the method of assessing "border-line" cases.—I am, etc.,

Canterbury. GORDON H. MCCRACKEN.

Obituary

SIR JOHN BROADBENT, BT., D.M., F.R.C.P.

Sir John Broadbent, consulting physician to St. Mary's Hospital, to King Edward VII Sanatorium, Midhurst, and to the London Fever Hospital, died on Jan. 27 at his country home near Wendover in Buckinghamshire.

John Francis Harpin Broadbent was born on Oct. 16, 1865, the eldest son of Sir William Henry Broadbent, M.D., F.R.S., first baronet, one of the leading London physicians and clinical teachers in the latter part of the reign of Queen Victoria, who had been physician to three generations of the Royal Family. John Broadbent, of Yorkshire descent on both sides, was educated at Rugby and Oxford, and entered St. Mary's Hospital while his father was still on the active staff there. He graduated M.A., B.M., B.Ch.Oxon in 1892, proceeded to the D.M. degree in 1894, and was elected F.R.C.P. in 1904. At St. Mary's he held the posts of house-physician, house-surgeon, casualty physician, and assistant pathologist and curator of the pathological museum, and became physician to out-patients in 1905. He was elected to the full staff in 1913 and for ten years was Dean of the Medical School, devoting much time and energy and good will to the duties of that office during a difficult period. He retired from the deanship in 1920 and from the active staff of the hospital in 1930. He examined in medicine for the Royal College of Physicians for four years and served on the Council in 1923–5.

Sir John Broadbent, who succeeded to the title in 1907, was secretary of the Section of Medicine at the Sheffield Meeting of the British Medical Association in 1908. In later years he was President of the Medical Society of London and of the Harveian Society of London. He had collaborated with his father in the book *Heart Disease and Aneurysm of the Aorta*, which reached its fourth edition in 1906; his younger brother, Dr. Walter Broadbent, formerly physician to the Royal Sussex County Hospital, Brighton, undertook the editorship of *The Writings of Sir William Broadbent*.

Sir John Broadbent married a daughter of G. P. Field, aural surgeon to St. Mary's, and had four children. Unlike his father, who was a man of robust and outspoken nature, he did not make an immediate impression in the wards or in the lecture-room, but students could feel his warm concern for their welfare and that of the hospital and medical school; and the value of his quiet teaching at the bedside was reinforced by the courtesy and consideration he showed to patients.

H. D. McKINNA, *M.C.*, M.B.

The very sudden death of Dr. H. D. McKinna of Nottingham came as a severe shock to his many friends. He had been in his usual high spirits, and was enjoying, with all his well-known vigour, the games at a New Year's Eve party at the rooms of his church, when he suddenly collapsed and died.

Henry Drummond McKinna was born at Huddersfield 47 years ago. He was educated at Huddersfield College and Silcoats School, and took his medical degree at Edinburgh University. In the 1914–18 war he was a second lieutenant in the Argyll and Sutherland Highlanders. It was characteristic of him that he joined up before he was of age. He was severely wounded in 1917, and won the Military Cross. On recovery he completed his medical studies at Edinburgh. After graduating M.B., Ch.B., he was house-surgeon at the Nottingham General Hospital, where he met his wife, Dr. Eva Young. They were married in 1924, and had two sons. He settled in practice at West Bridgford, Nottingham, in 1931, first as partner to Dr. Blurton, and on his retirement with Dr. S. C. Mattock. Apart from his large practice, he found time to act as a very capable assistant in the department of dermatology at the Nottingham General Hospital, and also as joint secretary of the local branch of the B.M.A. He was a member of the council of the Nottingham Medico-Chirurgical Society. He was ever keen on the welfare of his brother practitioners, and took endless pains at both local and representative meetings on their behalf.

The following tribute comes from J. G. B. and S. C. M.:

Dr. McKinna was worthy of the title of doctor, for he never spared himself in his efforts to bring help and comfort to his patients. He kept well abreast of the times, and any new treatment was not long withheld from his active and capable hands. When most of us would tire of the ordinary routine, he would still have that buoyant enthusiasm that marked all his work and made acquaintance with him such a treasured memory. Working day and night, he seemed to have unbounded energy, which, in the light of our knowledge now of the frail body that housed this gallant spirit, is nothing short of a miracle. His help was always generously given, no call on his precious time went unrewarded, he would come with a smile and an assurance that was a comfort in the time of doubt. Light did not come to him from eastern windows only, he found it in all directions; where one saw shadows he saw hope, and because of this great faith and noble outlook we will all miss him the more. Despite his very active life, he found a little time to play a few holes of golf, or the break of a day or so to cast a fly.

What a delightful companion he was! always ready for the fray, never despondent if things did not go right, never critical of failure, ever ready with that well-known smile to give encouragement and advice. How well he could give advice too! never leaving behind any sour taste, but usually something sound and of much help. It would be impossible to write of all the virtues of this great-hearted little man; only can we say a few little words which cannot express what the heart would. To his widow, to Colin and Alan, we would give our sincere sympathy in the days of their great sorrow.

F. E. SCRASE, F.R.C.S., D.P.H.

Dr. Frank Edward Scrase, who died at Newton Abbot on Feb. 4, was appointed medical officer of health for the Metropolitan Borough of Hampstead in 1912, and held office until 1932, when he retired on attaining the age limit. He studied medicine at Bristol and St. Bartholomew's Hospital, qualified in 1893, and took the F.R.C.S. in 1896. He was a member of the first Borough Council of Hampstead from 1900 to 1903, but did not seek re-election. In 1905, having taken the D.P.H., he acted as M.O.H. for a few months during the period between the death of Dr. Herbert Littlejohn and the appointment of his successor. He became honorary deputy M.O.H. in 1908, and in 1912, when the senior office again fell vacant, he was elected to the position.

Dr. Scrase was a man of kind disposition, and very popular among his colleagues. As a public health official he believed in steady, consistent, ordered progress; and during his term as M.O.H. he maintained the high standard which had been set by his predecessors. He was a member and at one time chairman of the Metropolitan Branch of the Society of Medical Officers of Health. In 1928–9 he was chairman of the Hampstead Division of the B.M.A. During his 21 years as M.O.H. he directed the development of many public health services, especially those connected with the campaign against tuberculosis, including the activities associated with the municipal tuberculosis dispensary at Kilburn; and the movement for a pure milk supply free from tuberculous infection. It is perhaps in maternity and child welfare more than in any other section that the gratitude of Hampstead is due to Dr. Strase. His years of private medical practice before undertaking public office stood him in good stead in this; and the development of this work, as with that connected with tuberculosis, was conducted with the good will and help of the local medical profession. Under his advice and guidance a comprehensive scheme was developed; antenatal clinics were established, health visitors and other staff were appointed. In some particulars, notably in the careful investigation of all the circumstances of each case of illness or death among parturient women and of every infant death, Hampstead has been among the pioneers. Dr. Scrase undertook this work personally many years ago, and a medical subcommittee of the Borough Council has continued the work. The low infantile mortality of Hampstead has for many years been remarkable. Dr. Scrase's interest was not only concerned with infants, however, and many years ago he reported: "In a borough like Hampstead no child should begin school life with any disease or physical defects that could have been prevented or mitigated during the first five years of life by any action that ought properly to have been undertaken. A little effort spent in this direction on young children will, in all probability, result in the diminution of the number of physically unsound workers and potential parents." Many other references could be quoted from his annual reports which indicate the wideness of his outlook and length of vision. Next to work among women and children, Dr. Scrase's chief interest lay in housing, as his many outspoken and illuminating reports have borne witness.

W. E. THOMAS, M.D., J.P.

Prof. R. M. F. PICKEN writes:

Wales has lost a prominent and distinguished member of the medical profession by the death of Dr. W. E. Thomas. Although he was a busy and successful practitioner he had taken an active part in local affairs since the inauguration of the modern system of local government in the last decade of the nineteenth century, serving both on the Rhondda Urban District and Glamorgan County Councils. His medical knowledge and his experience in local government

made him a natural choice as a representative on bodies concerned with health and education. Thus he was a member of the Court of the University of Wales, of the Court of Governors and Council of the University Colleges of South Wales and Monmouthshire, of the Council of the Welsh National School of Medicine, of the Board of Managers and Council of the Welsh National Memorial Association, and of the Board of Management of Cardiff Royal Infirmary. Up to the end of his life he continued to take a very active interest in the affairs of the Medical School and of the Welsh National Memorial Association, being chairman of the Medical Committee of the latter body. The prominent part he took in the central and local activities of the British Medical Association is too well known to need more than mention.

Thomas had not the Welsh gift of oratory. He was at his most vigorous in committee. He read and mastered his agenda papers and never accepted unthinkingly the official or majority view on any subject. He was highly argumentative and, while he watched carefully the possible effects of decisions on medical practice, his primary concern was the best interest of the community. He was a keen Welsh patriot and concerned that Welsh men and women should have a square deal where appointments were concerned, but he was equally determined that the best candidates should be appointed to posts irrespective of their nationality, as the best means of serving the interests of Wales.

Like many other people who are individualistic and inclined to controversy, Thomas was a most kind and reliable friend. If you had a good case requiring support he could always be relied upon to give it. He knew the inner workings of local government in Wales, so that his advice and help to younger men were invaluable. There are many who will miss his presence and his support.

Dr. IVOR J. DAVIES, consulting physician to the Cardiff Royal Infirmary, writes:

I wish to add a personal note to Dr. Arthur Jones's tribute. Dr. W. E. Thomas was our family doctor and everyone at Pentre and neighbourhood had a very warm affection for him. To his exacting colliery duties he added a large private practice. It is remarkable how he managed to do it all—professional, B.M.A., and public duties—so easily and well. "W. E." was quick but safe, methodical and very practical, and always worked to a strict programme or he would never have been able to accomplish so much and so continuously over half a century. Truly an amazing record, and the secret probably was that he had an exceptionally sound knowledge of modern medicine, an intense love of his profession and fellow men, and never wasted any nervous energy in his work. The early years of his practice were grim days in the Rhondda Valley, for there were no inter-valley roads at that time and no playing fields except for a few reserved for the leading football clubs. It was not until the Miners Welfare Commission became law that we secured recreation grounds—much to "W. E.'s" joy, for the collier was always first in his thoughts. On meeting him at Pontypridd when Glamorgan played its first championship match in the valleys instead of exclusively at Cardiff or Swansea, he remarked, "Now at last we shall see first-class cricket in the valleys." He was keen on sport, and particularly rugger, and never missed an international match, and was usually seen in the company of his old friend Dr. D. Rocyn Jones (president of the Welsh Rugby Union). He was proud of his alma mater—Edinburgh—and revered its great men. After attending a meeting of the Association of Physicians at Edinburgh I referred to its fine clinical demonstrations, when he sharply replied with that characteristic twinkle and shake of the head, "We were always foremost in clinical medicine, and several of your best men in London were Edinburgh graduates." "W. E." was a close friend of the late Earl Lloyd George in the great days of Liberalism, but his political leanings never lessened the miners' unfailing regard for their "doctor." He had a great love of Wales, its literature and music, and spoke excellent Welsh, for he came from the North. He was an elder at our nonconformist chapel, which he most generously supported throughout the long period of his professional life, as was eloquently affirmed at the funeral service by his pastor (the Rev. Idris Davies). W. E. Thomas set a high standard and leaves an influence of imperishable value in the mining valleys, and probably the best tribute to his memory would be to secure a real alleviation of the arduous life of a colliery practitioner by increased hospital and other services.

Dr. ALFRED COX writes:

I should be sorry if my old friend "W. E." were allowed to go without a salute from one who owed much to him in the way of kindness, hospitality, and enthusiastic co-operation in the work of the B.M.A. For many years he, with the late W. J. Greer, of Newport, was in the forefront of every battle at a time when South Wales was full of contract practice problems steadily fought out. Thomas was a born fighter. If he sometimes seemed too impulsive, he was a very astute politician and had many of the characteristics of his hero, Lloyd George. W. E.'s knowledge of the Welsh miners' leaders was extensive and peculiar. The B.M.A. could never be too grateful for his help in those critical times.

Centrally Thomas was also a prominent figure, and, as you truly said in your notice, "no Annual Meeting seemed complete without his genial presence." It was not that he spoke often. His work was done amongst the Welsh contingent, who had great confidence in his leadership. No picture of Thomas would be complete without some mention of his lively sense of humour, so I cannot refrain from relating one instance of it of which I was the victim, but a very appreciative one. W. E.'s colleagues in the Glamorganshire educational field presented him with his portrait, and I was invited to attend. I was unexpectedly called on to speak, and, while expressing my pleasure at being able to do honour to my old friend, I said that the artist (a lady, who was present) had missed what I thought was W. E.'s chief characteristic. She had portrayed a benevolent gentleman, a man in whom there was no guile, whereas we who knew him always thought of him as a born fighter, always "trailing his coat" and very sorry when no one accepted the challenge. This was very appreciatively received, but when W. E. got up to respond he said he had been maligned, and by the last person in the world who ought to talk about "loving a fight," for I, he said, was "the A. J. Cook of the medical profession." This brought down the house, for A. J. Cook was the most notorious militant, and almost vermilion in hue, of the miners' leaders at the time. Those who did not know the W. E. of twenty years ago must take it from seniors like A. T. Jones and myself that he was an outstanding figure, not only in B.M.A. circles but in nearly every branch of Welsh social and political life.

By the death on Feb. 6 of HUGH WANSEY BAYLY, *M.C.*, aged 73, the medical profession has lost a colourful and many-sided personality. He was educated at Clare College, Cambridge, where he graduated as M.A. in 1898; and at St. George's Hospital, whence he qualified as M.R.C.S., L.R.C.P. in 1900. He was passionately devoted to the sea and to yachting, and spent some considerable time as surgeon on liners; quite early in this century he had the courage to operate on a case of perforated gastric ulcer on shipboard, having persuaded the captain to alter course so that he should be able to stand up while he did the operation; he was awarded for his pluck and skill by the recovery of his patient, and it was said at the time that this was the first such result on record at sea. Before this he had served with the Yeomanry in the South African Field Force in 1900–1. Later still he was in 1903 house-surgeon at Great Ormond Street Children's Hospital, after which he visited India. A serious attack of acute rheumatic pericarditis hindered his subsequent activities for a considerable time, but did not prevent him from serving as temporary surgeon in the R.N. in 1914–15, and in the R.A.M.C. in 1915–19 wherein he reached the rank of major. He had the melancholy duty of attending the late Raymond Asquith when he was fatally wounded in the trenches, and was himself wounded by a bullet which went right through his knee-joint without touching a bone; he was awarded the Military Cross for his services. Professionally he devoted many years of his career to the study and treatment of venereal diseases, and practised as a specialist in this branch of medicine in Harley Street. He wrote a textbook on syphilis, but did not obtain the unanimous assent of his colleagues to some of the views which he expounded. He was founder of the Society for the Prevention of Venereal Disease, of which he remained a vice-president up to his death. When the recent war began his fondness for the sea and his burning patriotism found an outlet in service as medical officer on a transport in 1939–40; but illness supervened and he was forced to retire into inactivity. It would be futile to claim that Bayly was a great clinician, but he was a man of inexhaustible energy and unbounded courage, both physical and moral. Last year he contributed to the *St. George's Hospital Gazette* a most entertaining (and instructive) account of the many exciting experiences in his adventurous life.

We regret to announce the death of Dr. VAUGHAN PENDRED, of Tilford, Surrey, which took place in hospital at Farnham on Feb. 1. He was born at Herne Hill in August, 1869, and was educated at Westminster School, at Newcastle-upon-Tyne, and at Guy's Hospital. He qualified in 1893, and after serving as obstetric resident and house-surgeon at Guy's graduated M.B. of Durham University with honours in 1896, and obtained the F.R.C.S. in the same year. He proceeded to the M.D. degree in 1901. Before entering general practice he worked as assistant in the throat and ear department of the Newcastle Infirmary and as assistant medical superintendent of Fulham Infirmary. He practised first at Buckingham, then at Coventry, and from 1913 to 1936 at East Sheen, after which he retired to live at Tilford. Dr. Vaughan Pendred joined the B.M.A. in 1897, was chairman of the Richmond Division in 1933–4, and represented it at the Annual Meeting of 1935. He had also been honorary secretary and vice-president of the West London Medico-Chirurgical Society.

Universities and Colleges

UNIVERSITY OF CAMBRIDGE

The Vice-Chancellor announces that the Rockefeller Foundation has agreed to make available a grant not exceeding £15,000 for research in neurophysiology under the direction of Prof. E. D. Adrian during the five years ending Jan. 31, 1951.

The titles of the degrees of M.B., B.Chir. were conferred by diploma on A. S. Willis of Newnham College in January.

UNIVERSITY OF LONDON

WESTMINSTER HOSPITAL MEDICAL SCHOOL

Two entrance scholarship examinations in anatomy and physiology will be held on March 13 and 14. Applications for further particulars must reach the Secretary, Westminster Hospital Medical School, 17, Horseferry Road, S.W.1, by March 4.

UNIVERSITY COLLEGE HOSPITAL MEDICAL SCHOOL

Mr. R. Benesch, M.Sc., has been appointed to the British Drug Houses Fellowship for the study of the biochemical aspects of cancer, tenable at University College Hospital Medical School. He will work in the Department of Chemical Pathology under the direction of Prof. C. Rimington.

UNIVERSITY OF EDINBURGH

Prof. H. Davson, D.Sc., of Dalhousie University, will deliver a lecture on "Some Physicochemical Aspects of Vision" in the Biochemistry Lecture Room, University New Buildings, Edinburgh, on Thursday, Feb. 21, at 5 p.m. Students and graduates are invited to attend.

ROYAL COLLEGE OF PHYSICIANS OF LONDON

At a meeting of the College held on Jan. 31, with the President, Lord Moran, in the chair, Dr. B. T. Parsons-Smith was re-elected the representative of the College on the Queen's Institute of District Nursing and Prof. J. W. McNee and Sir Arthur MacNalty on the Imperial Cancer Research Fund. Reports were received from the committee appointed to consider the training of general physicians, from the social and preventive medicine committee on student health, and from the committee on dermatology. All three reports were approved.

Membership

The following candidates, having satisfied the Censors' Board, were elected Members of the College:

H. W. Bunjé, M.B. Lond., Glenys M. M. Donaldson, M.B. Ed., H. H. Doss, M.B. Cairo, A. Erdei, M.D. Vienna, R. H. J. Fanthorpe, M.B. Lond., H. McC. Giles, M.B. Camb., C. H. Goldmann, M.D. Leipzig, Susanna Gordon, M.D. Chicago, H. N. W. Harley, M.B. Lond., W. E. Henley, M.B.E., D.M. Oxon., M. Hewitt, M.B. Lond., A. L. Humphrey, L.R.C.P., D. G. James, M.B. Camb., S. T. H. Jenkins, M.B. Lond., J. D. Judah, B.M. Oxon., J. J. Kempton, M.B., Bristol, Madeleine J. Mackenzie, M.B. Lond., T. N. Morgan, M.D. Aberd., L. Nancekievill, M.B. Lond., L. R. Patel, M.D. Bombay, M. G. Philpott, M.B. Lond., J. D. Roger, M.D. Toronto, R. Schneider, M.D. Berlin, J. C. Scott-Baker, M.B. Lond., J. C. Sloper, M.B. Camb., P. M. Smythe, M.B. Camb., C. J. Williams, M.B. Liverp., H. Wolfsohn, M.D. Lond., F. J. Zacharias, M.B. Liverp.

Licences

Licences to practise were granted to the following 159 candidates (including 27 women) who have passed the Final Examinations in Medicine, Surgery, and Midwifery of the Conjoint Board, and have complied with the necessary by-laws:

D. C. Adamson, R. W. Adlard, P. K. A. Andrews, E. H. Annels, D. A. Arthur, K. M. Backhouse, C. E. Bagg, R. I. W. Ballantine, D. A. N. Barran, A. J. Barry, J. B. Berry, A. V. G. Bibby, G. E. Bond, J. G. Briant, H. G. Broder, W. Brown, M. K. Bryce, K. Burchill, D. J. Burnett, G. H. Carrick, N. R. Chan-Pong, R. Clitherow, H. W. Colson, Olive Cooke, M. G. Cox, W. W. Cree, P. W. Dagger, D. G. Dalgliesh, P. W. Darby, W. H. Davies, H. R. De Vitre, E. Dillistone, Jean M. Druce, Lucy M. Dunkerley, J. F. Durrans, Mary E. Eagles, S. Edelman, S. Eden, M. M. El Shinnawi, D. G. Evans, G. M. H. Evans, L. A. J. Evans, Elizabeth P. E. Everard, Elizabeth F. Everitt, Mary E. G. Feetham, P. A. Feldman, M. R. Fell, A. E. Flatt, J. M. Forbes, T. R. W. Forrest, Frances A. Fouracres, J. M. Garratt, E. B. Gethen Smith, Jean M. Gilbert, M. J. Gilkes, J. Gloster, J. H. H. Glyn, Beryl M. Goetzee, S. Goldwater, Janet Gordon, R. L. Greenwood, A. W. Halfhide, W. M. C. Halliman, R. J. C. Hart, P. M. R. Hemphill, N. D. H. Heneghan, A. C. Hill, Gina L. Hobbs, H. Hofstadter, B. H. Hogben, Vera Holdway, H. B. Houldsworth, J. D. Huntley, F. L. Jackson, Pauline M. Jackson, G. J. Jacobs, G. V. Jaffé, D. W. James, H. C. W. James, A. M. Johnson, A. T. Johnson, I. H. D. Johnston, G. F. Jolly, I. C. Jones, J. W. Jordan, W. P. Kelly, P. D. A. Kent, D. L. Kerr, S. J. Krister, Margaret A. Lakeman, C. H. B. Lawfield, Elizabeth J. Lee, K. Lowe, D. M. O. Lowry, H. A. R. Loxdale, Grace M. Lukose, Phyllis E. Lyne, N. J. C. McGill, H. W. Macintyre, E. W. F. Mack, Freda S. Mackover, I. K. R. McMillan, Sheila M. McNeile, A. E. Malone, F. M. Mann, B. Marsden, Martha H. Martin, R. F. Martin, C. G. W. Mason, J. D. Medhurst, D. McV. Merritt, R. H. B. Mills, W. I. Murdoch, D. Nuttall, R. H. Oldfield, T. C. L. Parry, R. A. J. Pearce, J. O. Pearce Edgcumbe, R. M. Penny, P. P. Philip, Carol M. Plackett, R. M. Powell, R. D. Price, W. L. G. Quinlivan, O. T. Randell, S. S. Raphael, R. W. Rapinet, A. T. Richardson, J. H. Ridgwick, Yvonne H. H. Roberts, Calmen Rosen, C. T. Ross, Dorothy J. Roth, A. H. Saddler, R. St. Aubyn, D. V. Salkeld, Frances M. Saunders, R. E. Sidebotham, N. H. Silverton, R. S. Smylie, K. A. Sowden, M. H. Stroud, W. K. Sutton, A. K. Thomas, R. H. Thomlinson, J. R. Tighe, H. W. Topham, D. A. H. Trythall, H. Wainstead, E. J. M. Weaver, Joan W. Wilkinson, J. D. Wilkinson, R. H. Wilkinson, J. R. B. Williams, R. D. Williams, C. J. Wilson, R. E. Woolley, G. R. Wotton, Sybil R. Yeates.

Diplomas

Diplomas in Anaesthetics were granted to the successful candidates whose names were printed in the report of the meeting of the Royal College of Surgeons of England in the *Journal* of Jan. 5 (p. 34), and Diplomas in Laryngology and Otology and in Psychological Medicine to those whose names appear in the report of the meeting published in the *Journal* of Jan. 26 (p. 150).

Diplomas in Public Health and Medical Radio-diagnosis were granted, jointly with the Royal College of Surgeons of England, to the following successful candidates:

PUBLIC HEALTH.—J. Attard, Ada Barnett, J. E. Dickson, J. Fielding, T. H Harrison, C. F. Ll. Hill, P. G. C. Jones, M. S. Moitra.

MEDICAL RADIO-DIAGNOSIS.—G. A. D. Gordon, P. P. Hauch, W. J. Latham, C. F. Parry, D. G. Wollin.

Medical Notes in Parliament

National Insurance Bill

Mr. JAMES GRIFFITHS on Feb. 6 moved the second reading of the National Insurance Bill. He said this was a culmination of half a century's development of British social services. The Bill consolidated into one the existing schemes of insurance against sickness, unemployment, and old age. It would bring economy in working and convenience to all concerned. These closely linked schemes would be under the control of a single Minister working through a single Department, and all the schemes would be based upon a single stamp upon a single card.

Sir HENRY MORRIS-JONES: Surely administration of health will remain under the Minister of Health.

Mr. GRIFFITHS said he referred to sickness benefit. All the people of this country would be brought under this all-embracing scheme. The sickness scheme was still not universal to-day. In sickness benefit the Bill raised the leading rate to 26s., compared with the present rate of 18s. for six months and 10s. 6d. afterwards. Grants to dependants were to be introduced for the first time in sickness benefits. The Government intended, in addition to giving cash benefits, to set up a comprehensive National Health Service, and to ensure that there should be the closest link between payment of cash benefits and provision of appropriate treatment. It had been estimated that the loss to the nation from preventable illness was £300,000,000 a year, equal to three-fifths of the total cost of this scheme in the initial year. He asked whether the nation could afford to go on without the scheme in view of the cost of preventable illness. Mr. Griffiths passed to the proposed maternity grant and allowance. He explained that a new allowance of 36s. a week for 13 weeks, 6 weeks before and 7 weeks after a birth, would only be paid if the mother stayed away from work.

Mr. R. A. BUTLER gave general support to the Bill, but calculated that the medical services, of which the House had not properly heard, would cost £105,000,000 yearly.

Sir HENRY MORRIS-JONES criticized the decision to defer or to refuse sickness benefit for 24 days in the case of self-employed persons. The only illnesses which lasted 24 days were seriously acute illnesses like pneumonia or chronic incurable diseases like cancer. Sir Henry remarked that the sickness ratio under the Bill was likely to be much increased. Many medical men told him that the ratio of illnesses of short duration had increased during the war. The position of medical men in dealing with sickness certificates was very difficult. The Minister might hope under the Bill and under the health scheme to have better control over the doctors in this matter, but Sir Henry warned him that he must not try to put the whole medical profession in a strait-jacket, or take away its freedom. If the Government did not get a friendly medical profession to co-operate with it the Bill would be damned.

The debate was resumed on Feb. 7 by Mr. ATTLEE, who said a comprehensive health service was yet to come. That service would be the Government's next instalment. He believed the benefits of the Bill and the provisions of the health service would save the immense loss which the country suffered through illness. Mr. LINDGREN offered favourable consideration in committee of amendments to allow sickness benefit for self-employed contributors to begin earlier.

The debate was again adjourned.

The Food Shortage

On Feb. 5 Sir BEN SMITH (Minister of Food) said the world's position in cereal supplies had deteriorated, and had been made worse by a series of droughts. All importing countries would have to make sacrifices. The British Government had accepted

a reduction of nearly 250,000 tons in United Kingdom wheat imports for the first half of 1946. This reduction could not be met out of stocks held in the country; it would have to be met by an early increase of the flour extraction rate to 85%. That might not be the last step. The change would be effected gradually. It would mean a return to the darker wartime loaf, but no deterioration in the nutritive value of the bread. It would reduce the volume of animal feeding stuffs, with a consequent diminution of livestock production, and less poultry, bacon, and eggs than the nation had hoped to enjoy later this year. The needs of the food-importing countries of the world were appalling. The world shortage of rice was contributory to the wheat shortage. Countries which could not secure rice turned to wheat or flour. The Government proposed not to issue rice to the civilian population of this country till world supplies became adequate. Owing to the shortage of cereals in India we should obtain less than half the quantity of ground-nuts which we had expected from this source for vegetable oils. The whaling fleets sent to the Antarctic had had very poor results. Our stocks of oils and fats had been substantially reduced. He found it necessary to reduce the cooking-fat ration by one ounce from March 3.

Mr. TOM WILLIAMS announced on the same date that from May 1 pig and poultry rations would be based on one-sixth of the pre-war stocks.

On Feb. 6 Sir BEN SMITH answered eleven questions about the withdrawal of dried eggs. He said it was expected that during the spring of 1946 there would be a much larger supply of shell eggs than in 1945, and the Government had decided that it was not justified in bringing in as much dried egg as in 1945. There would be a gap in the allocation of dried egg during the period when shell eggs would be at their maximum. When the supply of shell eggs began to fall off the Ministry of Food would start issuing dried eggs again, but he could not say upon what scale.

Mr. HERBERT MORRISON announced on Feb. 9 that Feb. 14 would be devoted in the House of Commons to a debate on the world food shortage.

EPIDEMIOLOGICAL NOTES

Discussion of Table

In *England and Wales* infectious diseases were more prevalent during the week, and the following rises were recorded: measles 181, acute pneumonia 140, scarlet fever 89, whooping-cough 78. The only large decrease was that of 50 for diphtheria.

Small increases in the notifications of scarlet fever were reported in most areas, the only notable exception being a decrease of 41 in Lancashire. London, with a decrease of 47, was the only exception to the general rising trend in whooping-cough. The only large increases in measles were Norfolk 102, and Durham 35. Four counties—Norfolk, Suffolk, Lancashire, and London—contributed two-thirds of the total measles notifications. The decrease in diphtheria was due to a few counties: in London there were 20 fewer cases, in Warwickshire 14, in Yorks West Riding 13, and in Staffordshire 11; the only increase of note was Durham 17.

Typhoid has been reported from an institution in the Walthamstow district of London; the patients include two of the nursing staff.

Dysentery notifications were 13 fewer than in the preceding week. No further cases were reported from Peterborough, where 38 cases were recorded last week. The outbreak in Leicestershire shows no signs of lessening; a further 139 cases were reported in this county during the week. The other large centres of infection were Yorks West Riding 58, London 33, Lancashire 26, Essex 13, Northumberland 13.

In *Scotland*, in contrast with the experience of England and Wales, a fall was recorded in the incidence of most infectious diseases. The decreases included acute primary pneumonia 41, dysentery 24, diphtheria 8. Small rises were recorded for whooping-cough and measles, of 19 and 11, respectively.

In *Eire* a further decline occurred in the incidence of diphtheria, the notifications of this disease having fallen by over one-third during the past month. Cases of enteritis and diarrhoea rose from 9 to 22.

Week Ending February 2

The notifications of infectious diseases in England and Wales during the week included: scarlet fever 1,351, whooping-cough 1,265, diphtheria 496, measles 1,167, acute pneumonia 1,794, cerebrospinal fever 71, acute poliomyelitis 13, dysentery 407, paratyphoid 2, typhoid 7. During the week 297 deaths were attributed to influenza in the great towns.

No. 4

INFECTIOUS DISEASES AND VITAL STATISTICS

We print below a summary of Infectious Diseases and Vital Statistics in the British Isles during the week ended Jan. 26.

Figures of Principal Notifiable Diseases for the week and those for the corresponding week last year, for: (a) England and Wales (London included). (b) London (administrative county). (c) Scotland. (d) Eire. (e) Northern Ireland.

Figures of Births and Deaths, and of Deaths recorded under each infectious disease, are for: (a) The 126 great towns in England and Wales (including London). (b) London (administrative county). (c) The 16 principal towns in Scotland. (d) The 13 principal towns in Eire. (e) The 10 principal towns in Northern Ireland.

A dash — denotes no cases; a blank space denotes disease not notifiable or no return available.

Disease	1946					1945 (Corresponding Week)				
	(a)	(b)	(c)	(d)	(e)	(a)	(b)	(c)	(d)	(e)
Cerebrospinal fever	76	4	37	1	2	81	7	16	5	2
Deaths		2	2				—	3		
Diphtheria	428	21	127	53	22	450	17	151	95	18
Deaths	7	1	3	1	—	4	—	1	2	—
Dysentery	358	33	51	2	4	295	20	79	—	2
Deaths				—	—				—	—
Encephalitis lethargica, acute	2	1	—	—	—	3	—	1	—	—
Deaths		—					—			
Erysipelas			52	9	5			44	5	6
Deaths		—					—			
Infective enteritis or diarrhoea under 2 years				22					6	
Deaths	66	8	6	11	—	46	5	9	12	5
Measles*	907	100	116	108	1	12,941	381	558	21	160
Deaths	1	—	—	—	—	12	—	—	—	1
Ophthalmia neonatorum	45	2	17	—	—	47	2	15	—	1
Deaths										
Paratyphoid fever	3	—	—	—	—	3	2	1 (B)	—	—
Deaths	—	—	—	—	—	—	—	—	—	—
Pneumonia, influenzal	1,450	97	81	18	22	1,397	106	14	5	5
Deaths (from influenza)†	273	35	43	8	8	87	11	3	1	4
Pneumonia, primary			469	12				302	20	
Deaths		109		17	26		69		23	21
Polio-encephalitis, acute	2	—				—	—			
Deaths		—					—			
Poliomyelitis, acute	6	—	1	—	—	7	—	—	—	—
Deaths		—					—			
Puerperal fever		5	13		—		—	10		—
Deaths										
Puerperal pyrexia‡	133	7	14	1	—	141	9	19	1	1
Deaths		—					1			
Relapsing fever	—	—			—	—	—			—
Deaths										
Scarlet fever	1,420	129	210	31	36	1,510	49	182	10	48
Deaths	1	—	—	—	—	2	—	—	—	—
Smallpox	—	—	—	—	—	—	—	—	—	—
Deaths				—	—				—	—
Typhoid fever	1	—	—	7	1	3	—	2	4	—
Deaths	—	—	—	—	—	—	—	—	2	—
Typhus fever	—	—	—	—	—	—	—	—	—	—
Deaths				—	—				—	—
Whooping-cough*	1,329	70	98	12	5	1,625	66	115	42	10
Deaths	9	2	—	2	1	14	1	2	3	—
Deaths (0-1 year)	494	71	72	30	19	460	50	68	58	31
Infant mortality rate (per 1,000 live births)										
Deaths (excluding still-births)	7,535	1,248	961	255	211	6,739	922	815	322	185
Annual death rate (per 1,000 persons living)			21·8	16·3				18·5	20·8	
Live births	7,028	1,084	864	393	279	6,202	704	814	258	271
Annual rate per 1,000 persons living			17·3	25·2				16·3	16·6	
Stillbirths	218	39	28			198	18	27		
Rate per 1,000 total births (including stillborn)			31					32		

* Measles and whooping-cough are not notifiable in Scotland, and the returns are therefore an approximation only.

† Includes primary form for England and Wales, London (administrative county), and Northern Ireland.

‡ Includes puerperal fever for England and Wales and Eire.

Medical News

At the request of the Governor of Malta, Prof. Alan Moncrieff, Director of the Institute of Child Health, University of London, is shortly visiting Malta to advise on health matters.

A meeting of the Middlesex County Medical Society will be held at Redhill County Hospital, Edgware, to-day (Saturday, Feb. 16) at 2.30 p.m.

A sessional meeting of the Royal Sanitary Institute will be held at 90, Buckingham Palace Road, S.W., on Wednesday, Feb. 20, at 2.30 p.m., when there will be a discussion on "The Education Act, 1944, and the Handicapped Child" to be opened by Dr. A. A. E. Newth. Another sessional meeting of the Institute will be held at Gloucester Guildhall on Saturday, Feb. 23, at 10.30 a.m., when there will be a symposium entitled "Some Problems of Water Supplies in Rural Areas at Home and Over-seas," and Dr. Charles Cookson will read a paper on "Building and Staffing of a Maternity Hospital in Wartime." Discussions will follow.

A general meeting of the Society of Medical Officers of Health will be held at B.M.A. House, Tavistock Square, London, W.C.1, on Friday, Feb. 22, 1946, at 2 p.m., when Dr. T. Ferguson, Professor of Public Health in the University of Glasgow, will deliver an address on "Lines of Approach to Public Health."

A meeting of the Association for Scientific Photography will be held at the Royal Society of Arts, John Adam Street, Strand, W.C., on Friday, Feb. 22, at 6.30 p.m., to discuss the photographic copying of documents and plans. After a paper by Mr. F. J. Tritton, B.Sc., examples will be shown of a number of ways of reproducing a page of a printed journal and also engineer's pencil drawings and ink tracings.

Dr. William Beaumont, medical officer in charge of the Physiotherapy Department of the Westminster Hospital, will give an address entitled "A Post-war Survey" to members of the Society of Physiotherapists at 3.15 p.m., on Saturday, Feb. 23, at the Royal Institute of Public Health and Hygiene, 28, Portland Place, London, W. Physiotherapists who are not members of the Society and would like to hear Dr. Beaumont's talk are asked to notify the honorary secretary, Society of Physiotherapists, 24, South Molton Street, W.1.

At a meeting of the Medical Society for the Study of Venereal Diseases to be held at 11, Chandos Street, Cavendish Square, on Saturday, Feb. 23, at 2.30 p.m. Major Wilcox, R.A.M.C., will speak on "Venereal Disease in West Africa."

Sir Henry Dale, O.M., M.D., F.R.S., will deliver four lectures on "Chemical Transmitters of the Effects of Nervous Impulses" at the Royal Institution (21, Albemarle Street, W.) on Thursdays, Feb. 28, and March 7, 14, and 21, at 5.15 p.m.

The amalgamation is announced of the Hospital for Women, Soho Square, and the Samaritan Free Hospital for Women, Marylebone. The Soho hospital celebrated its centenary in 1945; the Samaritan was founded in 1847. The amalgamated institutions hope to build a new and completely up-to-date women's hospital on a suitable London site. The hospital will cost about £1,000,000 and will have between 400 and 500 beds. It is further hoped through the amalgamation to increase the rate of research into and treatment of women's diseases, to establish "parenthood" clinics designed to inquire into the causes of unsuccessful births, and to institute post-graduate teaching in gynaecology.

The address of the Drugs Branch, Home Office, which includes the Poisons Board, is now St. Stephen's House, Victoria Embankment, London, S.W.1 (telephone No. Whitehall 8100). Applicants for import or export licences under the Dangerous Drugs Acts must still submit their applications and fees direct to the Finance Branch, Home Office, Cornwall House, Stamford Street, S.E.1.

Dr. G. H. Tovey and Dr. F. Pote have been appointed director and deputy director respectively of the Ministry of Health Regional Blood Transfusion Depot, Southmead Hospital, Bristol (telephone No. Bristol 68021), which has taken over the civilian transfusion responsibilities in Region VII, previously borne by the Army Blood Supply Depot.

There is a meeting of R.A.M.C. officers and men at the central mess of the Duke of York's on the first Friday of every month, at 7 p.m. All officers who have ever been members of units who had Territorial Headquarters at the Duke of York's or at Regent's Park are invited.

Surplus stores disposed of by Government Departments are not exempt from purchase tax. In some instances, however, they will be sold at a "tax-inclusive" price, and this will normally be the case with goods sold by local government authorities.

Major G. A. W. Neill, R.A.M.C. (Gray's Inn) was called to the Bar on Jan. 28.

Letters, Notes, and Answers

All communications with regard to editorial business should be addressed to THE EDITOR, BRITISH MEDICAL JOURNAL, B.M.A. HOUSE, TAVISTOCK SQUARE, LONDON, W.C.1. TELEPHONE: EUSTON 2111. TELEGRAMS: *Aitiology Westcent, London.* ORIGINAL ARTICLES AND LETTERS forwarded for publication are understood to be offered to the *British Medical Journal* alone unless the contrary be stated.

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MEMBERS' SUBSCRIPTIONS should be sent to the SECRETARY of the Association. TELEPHONE: EUSTON 2111. TELEGRAMS: *Medisecra Westcent, London.*

B.M.A. SCOTTISH OFFICE: 7, Drumsheugh Gardens, Edinburgh.

ANY QUESTIONS?

Hogben Test for Pregnancy

Q.—*Shortly before the war there was published a test for pregnancy using a South African toad, for which an accuracy similar to that of the Friedman test was claimed, but I have heard nothing of it since. The test seemed economical and easy to perform. Is it that the test has been discredited, or that there is a lack of interest on the part of pathologists and importers?*

A.—The sole reason for the temporary discontinuance of the Hogben test for pregnancy, which involves the use of the South African claw-toed frog, *Xenopus laevis,* has been that to import these animals during the war years has been exceedingly difficult. The test, however, has been extensively used by the Canadian military medical authorities and by the medical service of the Royal Navy. These frogs are now being bred in this country and elsewhere. There are growing stocks of them in London, Edinburgh, and Aberdeen. It can safely be assumed that in the immediate future this test will again be widely used, since it is the best of all for straightforward pregnancy diagnosis.

Head Lice, Real and Imaginary

Q.—*A man and his wife came to see me complaining of "head lice." They were able to produce only one "egg," which, when I looked at it under a hand-lens, was attached to a hair and had all the appearance of a "nit" but was only about one-third as big. There was no sign of any head lice on the scalp of either the husband or wife, but they state that if they go for a day or two without combing the hair it is possible to get many of these "nits." Could you suggest what this condition is? They had been treating their scalps with lethane oil, but without effect; on their visit to-day I suggested they might try ascabiol.*

A.—The only insect parasite which commonly affects the scalp is the head louse; crab lice occasionally spread to the head, but would be eradicated by the same means as the other species. Lethane hair oil properly used (i.e., one application of from 2 to 8 c.cm., depending on the volume of hair, with perhaps a second application a week later) is a rapid, safe, and certain cure. Secondary septic sores due to scratching can be given appropriate treatment when the lice are dead.

Probably the people concerned in the question were at one time infested with head lice, and the tiny "nit" seen was part of the old dead egg-shell. The present condition sounds like a dermatitis of the scalp due to excessive use of lethane (which in an overdose is a skin irritant), and to excessive washing, rubbing, and scratching. Those who are unfamiliar with head lice are not infrequently so ashamed of this condition that they become hysterical, imagining themselves permanently "unclean." They tend to give themselves excessive treatment with any medicament and almost perpetual washing and scrubbing. They will produce small bits of scurf and foreign material, insisting that these are insects which have emerged from their bodies. The use of ascabiol in such cases is not recommended. A reassuring talk, with perhaps a soothing lotion, should effect a cure. If this fails a dermatologist should be consulted, in case there is some further, non-entomological, skin affection.

Penicillin for Neurosyphilis

Q.—*In a case of syphilis of the nervous system without marked mental or physical signs but with a history of diplopia some years ago, what is the value of intramuscular penicillin?*

A.—Many cases of asymptomatic neurosyphilis have been greatly benefited by intramuscular penicillin; the dosage should be 4 to 5 million units, and injections should be given three-hourly over a period of fourteen days or so. If, however, beeswax-peanut oil is available as a vehicle, injections need be given only once or twice in the twenty-four hours. Penicillin therapy should be followed by tryparsamide and bismuth injections; the period of treatment will

depend on the effect on the cerebrospinal fluid, but probably two years should be the minimum. It is probable that penicillin acts through the blood-stream on meningo-vascular lesions; it cannot be expected to benefit parenchymatous ones. Nevertheless it is well worth trying.

Raynaud's Syndrome

Q.—*A patient aged 21 has in the winter months cyanosis and ischaemia of the hands. She is doing milking, and often has to have her hands in water. It appears to be a sort of angiospasm, and so far calcium and thyroid have done no good. May I have advice as to treatment?*

A.—The patient is presumably suffering from Raynaud's syndrome, and there is no effective medicinal treatment. The only simple remedy is complete avoidance of exposure to cold, and the patient should therefore be advised to change her employment if the presumed diagnosis is confirmed, preferably in consultation if there is doubt. In severe cases a bilateral cervical sympathectomy may be performed, but even after the operation the patient would have to avoid undue exposure to cold. The operation is not dangerous, but the scars at the base of the neck, and the enophthalmos, may be disfiguring.

Renal Failure in Acidosis and Alkalosis

Q.—*In acidosis and in alkalosis there is a tendency to renal failure. Why is this?*

A.—In persistent acidosis the buffering mechanisms of the blood eventually become inadequate and the accumulating acid radicles are combined with the main body base, sodium, the resulting salts being excreted in the urine and causing a drain of body sodium. Without an adequate supply of sodium the body cannot retain water, so dehydration occurs, comparable to the dehydration and renal failure in any other variety of sodium deficiency. The renal failure is due to a pre-renal cause, dehydration, there being insufficient circulating fluid to maintain an adequate flow of blood through the kidneys.

Alkalosis tends to cause renal failure by damaging the renal tubular epithelium, particularly the distal convoluted tubules, in which there may be necrosis of the epithelium and subsequent deposition of calcium salts. It is not yet known why this damage occurs, but it has been pointed out that this part of the tubule is most active in regulating the reaction of the urine.

Treatment of Anovular Menstruation

Q.—*Endometrial biopsy showed that a patient was having anovular menstrual periods. Her tubes are patent to insufflation. She is anxious to have a child. I have considered equine serum gonadotrophin with the hope of stimulating ovulation. What is the correct dosage, and should it be given only during that period of the cycle when one would expect the ovum to be maturing? Is any concurrent hormone therapy indicated?*

A.—The administration of equine serum gonadotrophin is appropriate treatment, but a better result is likely if it is given cyclically and in association with chorionic gonadotrophin. Assuming that the patient has a twenty-eight-day bleeding cycle, begin treatment on the fifth day (counting from the first day of a period), giving 400 i.u. of serum gonadotrophin intramuscularly each day up to and including the fourteenth day (ten injections). From the fifteenth to twenty-fourth days, inclusive, give daily injections of 500 i.u. of chorionic gonadotrophin. Carry out endometrial biopsy just before, or at the beginning of, the ensuing menstrual period to see if there is a secretory reaction. If there is no sign of ovulation omit treatment during the next cycle, but during the one following that repeat the course, doubling the doses of both preparations. If there is still no response there is little point in continuing the treatment, but a course of injections of chorionic gonadotrophin combined with pituitary synergic factor might be tried instead. Should ovulation occur as a result of the first injections, repeat the treatment every second or third month, instructing the patient to try to conceive and omitting, of course, the endometrial biopsy. Since these gonadotrophins are protein derivatives, it would be wise to carry out preliminary skin-sensitivity tests before each course of injections.

Sulphonamides in Cerebrospinal Meningitis

Q.—*Is there any clinical or experimental evidence that cerebrospinal fever responds less well to treatment with sulphonamides than formerly? I have the impression, from a very small number of cases, that the response is not nearly so good recently as in 1941. Is it possible that the organism has become sulphonamide-fast, as have strains of gonococci?*

A.—Cerebrospinal meningitis may be caused by meningococci of different serological types. Group I, which includes the older types I and III, has in this country been particularly associated with epidemics of the infection, whereas Group II is more commonly isolated from sporadic cases. At present Group II infections are more prevalent, and the onset of the disease seems to be less acute than is the case during epidemic periods. In these circumstances treatment may not be begun at so early a stage, and the clinical course of the disease may therefore not be so dramatically affected as it was, for example, in 1940–1. The meningococcus is very susceptible to sulphonamides, which have not so far been used in this country in adequate dosage, or prophylactically in the control of meningococcal infection, so that there seems no reason to suspect that the meningococcus is becoming sulphonamide-resistant. In treatment it is wise to use the more active of the sulphonamides—sulphathiazole or sulphadiazine—and if the patient is acutely ill to give the first dose by intravenous injection. If that be done, the sulphonamides should continue to effect the cures which have so impressed us since their introduction for the treatment of cerebrospinal meningitis.

Frigidity after Separation

Q.—*A patient aged 34, 2-para with regular periods (3–4/21), has been married ten years, and intercourse has been satisfactory. Her husband has been in the Forces for six years but has been home occasionally, and intercourse was then normal. In October he was demobilized, and for about a month she was sexually satisfied. Since then, and quite suddenly, she has become frigid. Examination revealed no abnormality, and the patient is becoming very distressed and depressed. Tonics and stimulants have not helped. During the past week I have seen three similar cases, and I am sure that the problem must be widespread and will become more acute as more men come home. What is the cause of this condition?*

A.—The most likely cause is a changed attitude towards the husband, or a changed attitude of the husband towards the wife. Physical examination is not likely to discover much; but a thorough examination of this change of attitude may reveal the cause. Soldiers abroad idealize their wives and homes; and the wives contemplate a heaven on earth when their husbands return. It does not work out that way. For a time all is thrilling; then the "honeymoon" is over, there are troublesome problems of home and work and children, and disillusion takes place. Moreover, they are changed persons from what they were when they separated. The result is there are quarrels, there are misunderstandings. A reaction sets in, and it is this reaction which makes their relations, including sex relations, go wrong. They should recognize that, the "honeymoon" being over, they must set about trying to readjust themselves to the new situations, and to their new personalities, till a sounder relationship is established. One cannot deal with sex in isolation: it is a function of the personality as a whole, and sexual troubles have often to do with causes which are not in themselves sexual at all. Another explanation is that after the first spate of sex there was a condition of libidinous exhaustion, an aftermath, a physical reaction in which no sex feelings could be aroused; and the patient, finding herself incapable of response, gets into a panic that all is lost, perhaps for ever. Thereafter her very anxiety and depression would prevent the return of libido, for sex needs to be spontaneous and anxiety inhibits it. To explain its cause may help the patient to cease to worry about it; and, if the latter cause is suspected, to refrain from intercourse for a time may restore the libido to its natural rhythm.

Cheiropompholyx

Q.—*In the absence of rest and freedom from worry, is there any treatment that will cure cheiropompholyx or give relief? A colleague has had treatment with x rays, vitamins, and various minerals, but he is an exacting type of patient and has not had a holiday for years. The present state is peeling, cracking, and tenderness of the skin.*

A.—In the absence of rest and of relief from fractional doses of unfiltered *x* rays at appropriate intervals it will be difficult to help this patient. It is presumed that there is no ringworm infection of the toes, or other focus of infection, playing a part in the aetiology. I would suggest trying phenobarbitone 1/4 gr. (16 mg.) at night and the following mixture internally three times a day, after meals: pot. brom. gr. 10 (0.65 g.), sp. ammon. aromat. ♏ 15 (0.9 c.cm.), tr. nuc. vom. ♏ 4 (0.25 c.cm.), infus. gent. ad 1/2 oz. (14 c.cm.). Injections of liver and vitamin B may help. Locally, try paddling the hands in a warm solution (1 in 4,000) of perchloride of mercury two or three times a day, followed by the application of a bland cream, such as: calamine gr. 40 (2.65 g.), lanoline gr. 30 (2 g.), ol. oliv. 1/2 oz. (14 c.cm.), aq. calcis ad 1 oz. (28.4 c.cm.).

Children in the Tropics

Q.—*Would you advise me on the question of bringing young children out to the Tropics? Is it true that a tropical climate is unhealthy for young children? If so, why?*

A.—It is difficult to answer this question in general terms, since conditions differ greatly, not only in different parts of the Tropics but depending upon where the questioner is likely to be stationed and the nature of his work. Thus, generally speaking, it would be unwise to take a young child to, say, the West Coast of Africa, while there might be good reasons for doing so if the questioner were considering India. In the latter case much would depend upon where he was likely to be stationed. Especially in North India, it is the usual practice to send one's family to some hill station during

the hot weather, and as everyone does this it is very easy to conform to the custom. In such a case young children not only thrive but have a thoroughly healthy and enjoyable life.

The reason why a tropical country is not suitable for young children is that a hot, and especially a hot moist, climate tends to impair their vigour so that they may be less robust than children at home. Over and above this is the question of disease, especially malaria and intestinal diseases. Where conditions of life are likely to be civilized and comfortable, with good bungalows, fans, and other amenities, very young children, even if the climate is hot, would probably do quite well; but it would be unwise to take them to a tropical country without knowing what the conditions were going to be.

In the case of a young married couple it would certainly be a wise step for the wife and child to be left in England until the husband had had, say, six months' or a year's experience of the country. This would be an advantage in other respects, as he would be able to judge much better what conditions would be likely to be, and he would be in a better position to make things comfortable when his wife did come out. Short of this it would be a good thing to get in touch, if possible, with someone having local knowledge of the country, and to take his or her advice. An important matter which has to be considered is the long separation later when the children grow up. Life in the Tropics may have disadvantages, but it has a great many compensations, even for children, in the way of wider interests and experiences, and many pleasures that are not open to those who stay at home. Where a good opening offers some reasonable risk is well worth taking.

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D. S. refers to an individual whose sole income is derived from the rents of property, and asks whether there is any way by which assessment under Schedule A can be avoided.

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Whether Excessive Tax has been Deducted

"ANON." has been a surgeon lieutenant in the Navy since July, 1943, and has had tax deducted from his pay at from £11 5s. to £10 a month. Has he a claim to any refund?

*** Prima facie the deductions have been excessive—on the figures given, to the extent of something less than £10 a year—but it is not possible to give advice without further details. We suggest that "Anon." should press the Income Tax Assessor's Department of the Admiralty for a detailed statement of his correct liability.

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New Year Honours

An omission from the New Year Honours list (Part II), published in the *Journal* of Jan. 19 (p. 100), has been brought to our notice. Cmdr. Thomas Henry Neville Whitehurst, M.R.C.S., L.R.C.P., Officer Commanding, No. 6 Ferry Pool, Air Transport Auxiliary, was appointed O.B.E. (Civil Division) "for services to aviation."

SUPPLEMENT TO THE
BRITISH MEDICAL JOURNAL
LONDON SATURDAY FEBRUARY 16 1946

HEARD AT HEADQUARTERS

New Scottish Secretary

The B.M.A. in Scotland has every reason to be happy in the choice of its new Scottish Secretary to succeed Dr. Craig. Dr. E. R. C. Walker, of Aberdeen, several years ago made his mark in medical politics both north and south of the Border. He is a son of the late Sir Norman Walker, who was President of the General Medical Council, and before the war he was vigorous in Association affairs in both the Scottish Committee, of which he was a member for eleven years, and the Representative Body for almost as long. Dr. Walker was educated at Edinburgh and Cambridge and he studied also in the United States. Afterwards he went into general practice at Aberdeen. At the outset of war he was mobilized, and in June, 1940, was captured by the Germans at St. Valery and remained a prisoner of war until October, 1943, when he was repatriated, and served a year as medical specialist in military hospitals. He has graduated through the various offices of Division and Branch, and this year he is chairman of the City of Aberdeen Division.

Reinforcements of Staff

The two new assistant secretaries were appointed by the Council at its last meeting primarily for work at Headquarters, though later they may work elsewhere in the Association field. Both were admirable choices from which the Association may expect much. Lieut.-Col. D. P. Stevenson has had a long military experience, having been a regular officer of the R.A.M.C. for more than ten years. He has seen service in China and Malaya, and for three years he has been Assistant Director-General, Army Medical Services. His work as Services secretary on the Medical Personnel (Priority) Committee has earned high commendation from those most closely in touch with it, and he has also represented the War Office as observer on the Services Subcommittee of the Central Medical War Committee and has been secretary of various advisory committees and boards. The other assistant secretary is Dr. Ernest E. Claxton, who was for many years in general practice in Folkestone, where he was honorary secretary of the medical society. Later, when his practice disappeared in the evacuation of the town in 1940, he took up practice at Sutton Coldfield. He has also served for four years in the Malay States in the Colonial Medical Service. He is the author of a book on weight reduction.

Exercise in Compression

The practice has been to allow a candidate for election to Council or its committees to include in the voting paper five items of experience, and these, grouped under different headings, brought in a lot of detail. Some have felt that this weighted the ballot against those who had been for some years absent on service. On the other hand, the grouped Branch areas from which half the members of Council are elected extend over a wide area, and a member may know nothing of a candidate the breadth of two or three counties away. A compromise has been reached whereby there may be included in the voting paper not more than 20 words as to professional, Association, and other experience. A further blow at verbosity is the ruling that "B.M.A." or "I.A.C." must count as three words, though it is true that dates are not to count as words at all. When one considers how little can be said about 20 years' varied experience in as many words, some voting papers will be exercises in compression.

The General Medical Council

A very able and important committee has been set up by the Council to consider the working of the Medical Acts with reference to the composition, functions, and procedure of the General Medical Council. It includes all the direct representatives on the General Medical Council itself, four of whom are members of the B.M.A. Council, and a number of others who are well fitted to give good advice on this subject. If the General Medical Council were now being set up for the first time there is no doubt that it would be a very different body from the one which was constructed in 1858. Probably one of the first questions to which the committee will address itself will be the size of the G.M.C. for disciplinary business. It is a melancholy spectacle to see forty men, most of whom have been torn for days at a time from their academic groves, engaged on determining whether a practitioner has been rightly convicted of drunkenness, or whether there was professional relationship during adultery, or whether there has been advertising, or canvassing, or covering, or some like offence. Twelve people can judge a man guilty of murder, and seven of larceny. On the other hand, on its educational side there is advantage in a large G.M.C., as the discussions now proceeding on the curriculum have shown.

Resettlement

Medical resettlement appears on the whole to have been going better than might have been expected, bearing in mind the large number of doctors involved. The next few months are, however, likely to be the most difficult. From the Army, Groups 25 to 30 were, in general, demobilized during January, and a further eight groups are due for demobilization during the present months. It seems probable that a number of these will wish to ease their immediate problem by taking one or more locumtenencies while looking round for permanent work of the desired type. The experience of the medical agencies is that they are now getting more inquiries for temporary work as locumtenents than they are from doctors seeking relief. On the other hand, there must be many general practitioners who during the war either have gone without holidays or have taken shorter holidays than they would otherwise have done and who are looking forward to their first real break since 1939 during the coming summer. It would be a real contribution to the resettlement of their colleagues from the Forces if some of these men were to take the whole or a part of their holiday during the next few months. It would also help the medical agencies to meet summer inquiries, which are likely to be unusually heavy this year.

POSTGRADUATE TRAINING FOR PSYCHIATRISTS AFTER DEMOBILIZATION

As announced in the *Supplement* of April 21, 1945 (p. 61), arrangements have been made for postgraduate training for certain classes of officers who joined the Forces and were unable to complete their postgraduate training or had their normal professional experience interrupted or curtailed. These arrangements are designed to include psychiatrists falling within the categories of officers specified there, and application for information on the facilities available should be made to the authorities named in the *Supplement* of June, 23, 1945 (p. 125).

These arrangements would not ordinarily be applicable to medical officers of local authorities who have been serving in the Forces and resume their duties on the staffs of mental hospitals or mental deficiency institutions. Many of these officers will, no doubt, need facilities in order to bring themselves abreast of certain aspects of the theory and practice of psychiatry, and the Board of Control is communicating with mental hospital and mental deficiency authorities suggesting to them that study-leave should be granted for this purpose. Some of these officers will have decided for themselves what kind of experience they need, and will, perhaps, make direct application to the hospital or organization providing it. Others, however, may desire further information of the facilities that may from time to time be available, and arrangements have been made in London for the Maudsley Hospital to help by giving any information it can. Inquiries should be addressed to Dr. A. B. Stokes, Maudsley Hospital, Denmark Hill, S.E.5.

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Dr. N. J. C. RUTHERFORD (Farnham) writes: The modern method of bleeding to provide serum for hospitals during the war has, I am informed, become popular among people of advanced age. Having started the procedure on patriotic grounds, they found that the loss of blood benefited their health, consequently they continue the treatment by regularly attending blood transfusion centres. I heard recently of one lady aged 81 and another aged 72 who swear by the treatment. Apparently the age limit of 60 has gone by the board in competition between centres to keep up their supply figures. Should there be a limit?

New Year Honours

An omission from the New Year Honours list (Part II), published in the *Journal* of Jan. 19 (p. 100), has been brought to our notice. Cmdr. Thomas Henry Neville Whitehurst, M.R.C.S., L.R.C.P., Officer Commanding, No. 6 Ferry Pool, Air Transport Auxiliary, was appointed O.B.E. (Civil Division) "for services to aviation."